

THE RAILWAY GAZETTE
A Journal of Management, Engineering and Operation
INCORPORATING
Railway Engineer • TRANSPORT • The Railway News
The Railway Times • Herapaths Railway Journal • RAILWAY RECORD.
RAILWAYS • ESTABLISHED 1835 • RAILWAY OFFICIAL GAZETTE

PUBLISHED EVERY FRIDAY

33, TOTHILL STREET, WESTMINSTER, LONDON, S.W.1

Telegraphic Address: "TRAZETTE PARL., LONDON"

Telephone No.: WHITEHALL 9233 (6 lines)

Annual subscription payable in advance and postage free:

British Isles and Abroad £2 5s. 0d.
Single Copies One Shilling

Registered at the General Post Office, London, as a Newspaper

VOL. 73 No. 10

FRIDAY, SEPTEMBER 6, 1940

CONTENTS

	PAGE
Editorials	241
Publications Received	245
The Scrap Heap	245
Overseas Railway Affairs	246
Road Transport Section	247
Railway News Section	255
Personnel	255
Transport Services and the War	257
Stock Market and Table	268

DIESEL RAILWAY TRACTION SUPPLEMENT

The September issue of THE RAILWAY GAZETTE Supplement, illustrating and describing developments in Diesel Railway Traction, is now ready, price 1s.

NOTICE TO SUBSCRIBERS

Consequent on further paper rationing, new subscribers cannot be accepted until further notice. Any applications will be put on a waiting list which will be dealt with in rotation in replacement of existing subscribers who do not renew their subscriptions.

Annual subscriptions are payable in advance and subscribers are advised to pay their renewal accounts before the expiration of the existing subscription as the dispatch of copies will in all cases be stopped on expiration

DISPATCH OF "THE RAILWAY GAZETTE" OVERSEAS

We would remind our readers that there are many overseas countries to which it is not permissible for private individuals to send printed journals and newspapers. THE RAILWAY GAZETTE possesses the necessary permit and machinery for such dispatch, and any reader desirous of arranging for copies to be delivered to an agent or correspondent overseas should place the order with us together with the necessary delivery instructions.

We would emphasise that copies addressed to places in Great Britain should not be re-directed to places overseas, as they are stopped under the provisions of Statutory Rules & Orders, 1940, No. 629

Death of Lord Horne, 15th Chairman of G.W.R.

WHEN Lord Horne of Slamannan, whose death is recorded on page 255, became the fifteenth Chairman of the Great Western Railway Company, at the age of 63, in January, 1934, he uttered a prophecy which has come true too soon. He remarked that one thing was certain, namely, that he could not expect to occupy the chair for twenty-six years, as had his predecessor, Lord Churchill, who had succeeded to it in April, 1908. The loss of two Chairmen, both outstanding personalities in differing ways, within the brief period of seven years, is a heavy blow to the company they served so well. Lord Horne's association with the Great Western dated back to 1923 in which year he joined the board. Shortly after taking the Chair, he paid a series of visits to the chief industrial centres served by the railway and met leading representatives of the various industries. This was his first public engagement as Chairman and served to bring him into close contact with the problems of those whom his line served. In the year after his election as Chairman, the company attained its centenary and held celebrations at Bristol and London. Unlike Lord Churchill, whose business interests apart from the railway were very few, Lord Horne sat on the boards of many companies of varied kinds, and was a prominent City figure. Earlier he had enjoyed a successful political career and was proud of the fact that he was the only Chancellor of the Exchequer who had reduced Income Tax by a shilling. In the Coalition Government of 1918-22 he held successively the position of Minister of Labour, President of the Board of Trade, and Chancellor of the Exchequer. A gifted speaker, with a flair for the humorous and telling phrase, his public speeches were always of a very high order, marked especially by well-chosen opening sentences and fitting perorations. His ability to deal with complex matters in simple terms was well demonstrated in his last address to stockholders of the G.W.R. at the annual meeting in February last, when he gave a masterly exposition of the financial agreement between the Government and the railways.

* * * *

Sir Percy Rothera

Sir Percy Rothera, Deputy Chairman and former Agent of the South Indian Railway Company, whose regretted death on September 2 is announced, was one of the distinguished band of engineers who have risen to the highest executive office on a railway. He began his engineering training with some four years' experience on the construction of the northern section of the Great Central Railway extension to London, but his working life was chiefly on the South Indian Railway, which he joined in 1898 as an Assistant Engineer, rising through the various grades to be Chief Engineer. His work received the special recognition of his directors for its efficiency in carrying out the renewal of several large multiple span girder bridges by a method designed by himself and described in his paper "Renewal of large Span Girders in Southern India" presented to the Institution of Civil Engineers in 1914, for which he was awarded the Indian Premium and a Telford Premium. During the last war he became Director of Mesopotamian Railways. After his return to the South Indian Railway he was appointed in 1925 Agent to the company. In the labour troubles which arose in 1928 during his term of office he directed matters with exceptional tact and dealt with the situations as they arose from time to time, enabling a service of trains to be run throughout the whole period of the strike. He retired in 1935 in order to join the board in London.

* * * *

Railways and the First Year of War

The first year of the war has been full of activity for the British railways, as our columns have testified week-by-week. The railways had fortunately carried through intensified

long-term improvement schemes for their tracks, signals, freight depots and warehouses, locomotive depots, and bridges, in addition to modernising maintenance methods and bringing workshops up-to-date. These factors have helped the railways to make an enormous contribution to the national war effort. It will be recalled that one of the first war tasks of the railways was the evacuation of nearly a million and a half schoolchildren, cripples, and hospital patients from London and other large cities, for which purpose 1,500 special trains were run from the Metropolis alone. An interesting sidelight on this first evacuation was the despatch of 30,000 perambulators to the reception areas after the transport of the children. Simultaneously the railway freight services were busy transporting to places of greater safety, foodstuffs, valuable art treasures, and irreplaceable records, whilst the delivery of Anderson shelters was accelerated. Within a very short time, too, ambulance trains and specially-fitted trains for the evacuation of civilian casualties from first aid clearing stations, were turned out by the railway workshops. In all, seven miles of carriages and vans were used for these purposes. In most districts passenger train services were practically unaffected by the first evacuation, but as the movement of the British Expeditionary Force to France gathered momentum, train services were drastically curtailed and restaurant cars were withdrawn for a few weeks.

* * * *

Blackout and Frost

One of the greatest problems which faced the railways last winter was working through the blackout. The considerable volume of railway work, including the handling of a large proportion of goods and passenger traffics in marshalling yards and stations, which in peacetime is carried out by night with the aid of intensive artificial lighting systems, was severely restricted. Some station roofs were painted black, and carriage lighting was eliminated. As a result of experiments and tests, reading lights were restored in the main-line trains, and in suburban trains schemes were devised to permit as much light as possible without extending beyond the carriage windows. After foggy weather at Christmas, the New Year brought a new enemy to the railways in the form of frost, snow, and ice, and the worst weather for a century was experienced. Some 1,500 miles of railway lines were completely blocked; many snow drifts of 15 ft. occurred; hundreds of miles of telegraph and telephone wires were brought down; and water troughs were frozen solid. In some districts there was a shortage of water; 300 snow ploughs were used to clear the lines; and troops assisted railwaymen in digging out snowed-up trains. The remarkable phenomenon of falling rain which turned to ice immediately it touched metallic surfaces, coated miles of live rails on the electric routes with ice, thus cutting off their power, and requiring the use of steam locomotives to assist the electric trains until the live rails could be freed. The effects of this severe weather were felt for some time afterwards. Simultaneous demands were made from all parts of the country for coal, supplies of which had run short. Special steps were taken to increase the number of coal trains, and through the Easter holiday the railways worked coal freights and foodstuffs without interruption.

* * * *

British Railways and the Blitzkrieg

With the weather improvement in the spring, the war effort expanded, and as many as 2,000 special trains a month were run for the movement of troops and equipment. Preparations had been made to transport both troops and civilians for the Whitsuntide holidays, when, owing to the invasion of the Low Countries the general holiday was cancelled at extremely short notice. Freight depots were kept open, and workmen's trains began running on Sundays. Further evacuation schemes were carried through without a hitch, and for six consecutive days trainloads of children again left London. Over 500 trains carrying 120,000 children

were run from evacuation areas embracing 60 towns and cities. As the campaign in France developed, the railways carried streams of refugees seeking sanctuary, trainloads of American and Japanese nationals going home, and aliens and prisoners of war. The railway part in the historic evacuation from Dunkirk included cross-Channel ships, some converted into hospital vessels, helping in the rescue of men of the British Expeditionary Force. On land, 186 trains made 620 journeys, and carried upwards of 300,000 men from seven ports. In addition, 100 trains were needed to assist the evacuation of the civilian population from the Channel Islands, and for the movements of the Forces which went to the assistance of France. As war production expands, more and more calls are being made upon the railway freight services, whilst the calling up of further age groups to the Colours and the arrival of Forces and supplies from overseas, have increased the already high proportion of men and women in uniform travelling by rail. The Minister of Transport, Sir John Reith, has said "Whatever calls it may be necessary to make on the efficiency and endurance of railwaymen, they will surely be found ready and willing," and the experience of the past year shows that this valued tribute is fully deserved.

* * * *

Overseas Railway Traffics

Except for the improvement of 21,000 pesos in Buenos Ayres Great Southern receipts in the 8th week of the financial year, Argentine traffics have continued their downward course. Great Western of Brazil earnings, however, are still moving upwards both in sterling and in currency, and for the 34 weeks they show an advance of £66,200 and 2,449 contos. Leopoldina and San Paulo receipts to date are up £86,564 and £144,339, respectively, in sterling, but are slightly down in currency.

	No. of Week	Weekly Traffics	Inc. or Decrease	Aggregate Traffic	Increase or Decrease
Buenos Ayres & Pacific*	8th	1,125	89	8,910	1,145
Buenos Ayres Great Southern*	8th	1,932	21	15,291	286
Buenos Ayres Western*	8th	635	5	5,023	471
Central Argentine*	8th	1,374	607	11,519	5,633
		£	£	£	£
Canadian Pacific	33rd	662,200	+ 135,000	20,170,800	+ 3,902,800
Bombay, Baroda & Central India	20th	199,875	+ 11,850	3,703,125	+ 406,050

* Traffic returns in thousands of pesos.

Canadian Pacific gross earnings for the first seven months of 1940 amounted to £18,137,600, an increase of £3,444,600, and the net earnings of £3,008,200 showed an improvement of £1,812,600.

* * * *

Rhodesia Railways

Delay in the completion of the accounts of Rhodesia Railways Limited has made it impossible to settle the dividend which ordinarily would have accrued to Rhodesia Railways Trust Limited for the past year. Sir Dougal O. Malcolm, Chairman of the trust, explained at the meeting on August 29 that the Rhodesia Railways accounts were sent in February to Rhodesia for submission to the Railway Commission which still had under consideration very complicated questions, more particularly those relating to provisions for taxation, affecting those accounts. The railways accounts showed net earnings before debenture service of £1,386,843, a reduction of £533,430 compared with the previous year. This arose from the reduction in the agreement rates made to the Northern Rhodesia copper mines from October 1, 1938, and from the general reductions from January 1, 1939. The latter had to be made under the legislation governing the railways because it had been ascertained that at September 30, 1938, the statutory reserve account of the railways was more than twice the amount of the annual loan provision. The standard revenue for which the railway budget for 1938-39 had to provide included only £150,000 for reserves and £125,000 for dividends, and rates had to be reduced to offset what would otherwise have been a probable large surplus over the standard revenue. The dividend ultimately to be declared for the year ended last September and that for the current period are both limited to £125,000 but, although Rhodesia Railways Trust shareholders have had to forgo the benefit of one dividend from their chief investment on the present occasion,

they may get the benefits of two payments in the current financial year.

* * * *

Welfare and Output

A general high standard of fitness and cheerfulness among workers is recognised to be one of the principal factors in achieving the highest war output in industry. An outstanding example of the development of welfare ideas to meet increased activity, originated in peacetime, is afforded by the firm of British Timken Limited. The blackout, the seven-day week, and night shifts deprive workers of sunlight, and artificial sunlight treatment is provided under qualified supervision. Short-wave therapy is used for treating septic injuries and skin troubles. Eyesight is of vital importance in quick and accurate production, and free eyesight tests are given. Footwear is a problem. High-heeled shoes on a concrete floor will take a serious toll of staying power, and except in certain types of factories rubber soles are unsuitable. Wooden shoes are therefore supplied at half cost. Smoking is allowed, and is found to help. Music, both in working hours and at meal times, is a benefit, and care is taken to keep to one class of music in each session. Works canteens are brightly decorated, and the preparation and choice of food for the workers is as carefully planned as production in the factory. In the national interest the firm has extended an invitation to any director or works manager engaged on war production to see these methods at first hand.

* * * *

Alternating Current Welding

Much can be said in favour of both direct and alternating current for arc welding purposes. A British firm of electric welding specialists has now developed a system which combines the advantages of both. It has been found that for the highest quality work it is desirable to combine the steadiness and ease of striking the arc usually associated with d.c. with the freedom from arc "blow" which is most noticeable when using d.c. and is almost unknown when using a.c. A satisfactory method for effecting this combination is to use a.c. but to increase the frequency from the 50 cycles which is practically the standard of supply in this country to 150 cycles. Normally the change of frequency involves the use of rotary machinery but the company in question has developed a static method in which this is effected by the use of a transformer. The supply is taken from three-phase, 50-cycle mains, using the star connection for the primary winding and the delta connection for the secondary, the delta being completed by the arc circuit and the material being welded. The magnetic circuit is so designed that the arc can be readily struck and the output is single-phase a.c. at 150 cycles, the system yielding a balanced load on the supply mains.

* * * *

Camouflage

In the earlier stages of the war, we noticed that a certain type of military traffic on the railways was conveyed on open flat wagons with a few leafy branches tastefully disposed on top of the load. A mobile wood is well known to have had a depressing effect on the morale of the forces commanded by Macbeth, but it is now evidently considered that the publicity accorded to the bluff of Shakespeare may impair its effectiveness at the present time, particularly in operations against an enemy noted in not far distant years for the profundity of his Shakespearean scholarship. In consequence Birnam wood no longer moves towards Dunsinane, amid tell-tale steam wafted from a locomotive innocent of disguise. So far we are not aware that abandonment of this literary deceit has had serious consequences. In fact, we understand that any target which appears to proclaim its true nature to an observer in the air is viewed with suspicion, and avoided as being a possible bait for unwary bomb-aimers. It is only "what you can't see you can't hit," and a wood on wheels was more likely to have caught the eye than to have eluded it.

R. E. C. and Higher Charges

THE peculiar position in which members of the Railway Executive Committee are placed by reason of their being, in that capacity, the direct agents of the Minister of Transport under the railway control arrangements, and officers of the various controlled undertakings when acting in their private capacities, was the occasion of a breeze before the Railway Charges Consultative Committee on Monday last. In THE RAILWAY GAZETTE on numerous occasions attention has been directed to the need for an unambiguous definition of the function of the R.E.C. in order that the members of the committee, the railway companies, and the public generally, should have a clear understanding of the responsibilities, powers, and limitations of the members of the committee. The matter is of first class importance and was so regarded by the boards of the railway companies early in the control period, for, in negotiating the agreement with the Government, they made it a condition of acceptance that a formula should be agreed defining the functions of the R.E.C. When the contracting parties are in the dark as to the position which is occupied by the chief link between them, it is small wonder that the public finds it difficult to reconcile the private occupations of the members with their official status on the Railway Executive Committee.

During the hearing of the application for the proposed increase in charges, Mr. Comyns Carr, K.C., who was appearing for various coal interests in opposition to the application, questioned Sir William Wood at length in an endeavour to elicit a definition of the status of the Railway Executive Committee. In this he was, of course, unsuccessful for the very good reason that, until the formula has been agreed, not even the members of the committee are in a position to give more than a general description of their functions. Mr. Hughes suggested that in the Minister's control of the railways he had set up the R.E.C. to advise him. Sir William replied that he would rather say that the members of the R.E.C. were acting as the agents of the Minister. He answered: "Not necessarily," to the suggestion that the committee was in fact running the railways subject to the Minister's discretion, and that if he [the Minister] wanted to direct anything relevant to that he went to the R.E.C. Although the members of the committee were employed by the various controlled undertakings, they were still acting as agents for the Minister. He strongly affirmed that he was acting in no other capacity when sitting on the committee. He did not act for his company when serving as a member of the R.E.C.

Mr. Hughes made it clear that he did not suggest any impropriety, but he was concerned by the fact that the figures on which the proposed increases in charges were based had been compiled by the chief executives of the railway companies which would be the principal beneficiaries of the higher rates. He did not question the accuracy of the figures but thought they should be criticised a little more in view of their source than if they had come from a purely outside body. The trend of the examination of Sir William Wood, although wholly inconclusive in its results so far as enlightenment on the position of the R.E.C. was concerned, threw into prominence once more the danger of allowing the position of the R.E.C. to remain indeterminate. When the House of Commons deals with the proposed increases in rates, as it is generally expected it will wish to do, it may press the Minister to put into unequivocal form his views on the position in the general scheme of railway control occupied by the committee. It would be all to the good if the formula for which the railway chairmen pressed could be agreed by the time the debate on charges takes place. The discussion in the House of Commons, judging by the daily press, seems likely to go much farther than the present application and to embrace the whole matter of the financial agreement. If that is so, it is essential that so important a factor as the status of the R.E.C. should be defined plainly.

The sitting on Wednesday was marked by a statement by Mr. W. Bruce Thomas, the Chairman of the consultative committee, which put into clear form certain matters which seemed to be escaping the notice of some of the parties. He pointed out that, although the Railway Executive Committee had recommended a flat increase all round in transport

charges, that proposal would not necessarily be accepted. Neither would the consultative committee feel itself bound to October 1 as the date on which the proposed changes became operative, for, if the necessary enquiries were not completed by then, a later day for the introduction of amended rates and charges would have to be fixed. Mr. Thomas's announcement did no more than emphasise the inherent function of the consultative committee, which is to ascertain the best means of raising the sum required to offset the amount by which costs had advanced and to tender advice to the Minister of Transport on this matter. Later the Chairman amplified his earlier statement and said that a flat increase was not necessarily the best means of meeting additional costs. It might be that the members of the consultative committee would reach the conclusion that some traffics should be treated more lightly than others and he suggested that recourse might be had to lists of merchandise rates in an endeavour to discover if a system of differentiated charges could be evolved. The complexity of arriving at a rates structure based on individual considerations such as the Chairman appeared to have in mind, would inevitably require considerable time and was probably the reason for the suggestion that the deliberations of the committee might not be concluded in time to make fresh charges effective on October 1.

* * * *

"Superflex" Rails

A PROPOSAL of interest connected with the design and maintenance of railway track was made as a written communication by Mr. H. Iredell to the International Rail Congress of 1938, but too late to permit of any discussion there of its merits or disadvantages. The idea is based on the fact that the rolling load causes deflection of the rails as the wheels pass over each span between the semi-rigid supports given by the chairs, and in particular at the joints. As a consequence, it is claimed that periodic vibration occurs both throughout the length of the rail and also of all details of the coach chassis below the spring level; it is further claimed that the heavily-loaded passenger coach springing cannot fully absorb vibration of such high frequency, and that the motion of the vehicles is in some degree impeded by the fact of their having to mount an endless succession of gradients from trough to crest between the chairs. This factor is held to encourage the development of creep and to accelerate the failure of rails by breakage. The remedy proposed is to compensate for or counteract these depressions by cambering the rails upwards between each pair of chairs, so that each new rail would be laid in the track with a series of undulations in the vertical plane, of exactly the same period as the chair-spacing. These undulations would need to be introduced into the rail during manufacture, either while the rail was hot or after cooling. The inventor claims that "the slight extra cost per ton of this last stage in the process of manufacture would be more than saved annually in platelayers' wages alone, to say nothing of the economy effected by the increased life and decreased maintenance of rolling stock, permanent way, and structures, reduction in the vast number of cracked rail ends and fish-plates, greatly diminished creep, and, lastly, the additional comfort to the passengers can only be guessed at, as no train has, up to the present, run with total absence of vibration from rail deflection. Coupled with this, the avoidance of incessant impact should make for a state of perfect composure."

A great deal of proof is necessary, however, before it could be accepted that all these considerable benefits would be secured by carrying this proposal into effect; and apart from that, the theoretical and practical objections to it are considerable. So far as concerns the theoretical side, the greatest difficulty arises from the variation in axle-loads and speeds as between one engine, train, or coach and another. With these variations in weight and in impact there are corresponding variations in deflection, so that the counter-camber appropriate for one set of conditions might be quite wrong for another. The inventor would propose to get over this difficulty by counter-cambering up to a proportion only

of the maximum measured deflections obtained in the worst conditions; this would result in the counter-camber being a correct compensation for, say, two-thirds of maximum deflection, the latter therefore producing deflections only one-third of what they would be without counter-cambering, whereas with light loads the track might be cambered the wrong way, but actually only to the same extent negatively as it depressed positively under the same loads without cambering. In effect, the depressions in the last case would be over the chairs instead of between them. The condition of the ballast under the sleepers and the packing also has a considerable influence on the results, but such a variable as this can hardly be taken into account; the inventor's proposal assumes both ballast and packing to be satisfactory. He would arrive at his constant for counter-cambering, both between chairs and at the joints, by actual measurements of track deflection. The inventor points out that so far as concerns adapting the counter-camber to varying speeds, the problem does not essentially differ from that of canting curves, where one constant is applied for a predetermined maximum speed irrespective of the way in which actual speeds round the curve may vary.

Another problem is that of manufacture. At what stage of production would the cambering be carried out? It could not be done during the rolling, but would absorb less energy if the pressure were applied while the rail was hot. Complex apparatus would be needed, however, to apply the pressure in such a way as to produce perfectly even curves, and the effect of this treatment on the rail during cooling, as well as on the subsequent straightening processes, would need to be considered. Further, if any of the cambered rails were found during inspection to be in part defective, it would be impossible to use the good portions of them in switch and crossing manufacture; and as this recovery from defective material is depended on to supply from 5 to 10 per cent. of switch and crossing rail requirements, the loss so occasioned would be considerable. Alternatively, if the cambering were done cold, it could be conducted on finished rails after the inspection has taken place, and the short-length question would not arise, though dealing with cold rails in this way would have its own difficulties. The inventor suggests mounting the finished rails foot up on supports spaced at the same distance apart as the chairs, and then passing over them a rolling load of a weight sufficient to produce the required permanent set, but he appears to have little conception of the magnitude of the load so required, nor of the difficulty of conducting such an operation satisfactorily. The rail-ends would also require a separate treatment to give the correct upward deflection. Probably the only way of cambering the rails successfully would be by carrying them under or past a hydraulic ram, or a succession of rams, until all the curves necessary—24 in a 60 ft. rail, for example—had been imposed, but this would greatly increase handling costs. The inventor's claim that harder steel could be used with impunity in rail manufacture if his principles were adopted, owing to reduced fracture-producing tendencies, is hardly defensible, as, even assuming that his theories worked out successfully in practice, the whole aim of rail research in these days is steadily to increase the toughness of steel, rather than its hardness, in view of the ample proof now available that increased tenacity provides greater resistance to abrasion than increased hardness. His claim that even reduced rail sections might for the same reason be possible would seem to defeat the very object that he has in view, as reduced depth of the rail would itself increase the tendency to deflect under load. Indeed, we have here what seems to be the key to the whole problem. If the considerable expense that would inevitably attend this complicated cambering operation were to be applied to increasing the depth of the rail section, and thus adding to its girder strength, a greatly increased resistance to deflection under load would be provided in a much simpler and more practical fashion. It is doubtless considerations such as these that have influenced the Pennsylvania Railroad in producing its 152 lb. per yd. flat-bottom rail section, much of the strength of which is concentrated in the 8 in. of its depth. The idea behind the Superflex rail is, nevertheless, of considerable interest, and at a more propitious time than the present it might be possible to conduct an experiment on the lines suggested.

PUBLICATIONS RECEIVED

Universal Directory of Railway Officials & Railway Year Book, 1940-1941. London: The Directory Publishing Co. Ltd., 33, Tothill Street, S.W.1. 8½ in. × 5½ in. × 1½ in. 605 pp. Price 20s. net.—The forty-sixth edition of this valuable directory has recently been issued, in spite of hostilities in Europe and their wide-spread effect throughout the world. The compilers have been so fortunate as to secure the most up-to-date particulars from many European countries and in some cases the returns were actually received a day or two after the occupation of the respective territories by Germany; in the present circumstances, such information is of great value. Railway data concerning the whole world are now of particular moment in view of the attention now being fostered by the Government to the maintenance and expansion of the British export trade. The lists of railway officers have been carefully checked, and also the brief descriptions of the chief railway systems of the world, together with the latest available finan-

cial results. The general arrangement of the volume preserves its familiar geographical basis, and advantage has been taken with the present edition to arrange the European entries in strictly alphabetical order, regardless of the relative importance and size of the railway systems in the respective countries. A similar change is the segregation of entries relating to Burma from those of India. The order in which the entries appear has been selected so as to group all the railways in the United Kingdom, the British Colonial Empire, and the Dominions in sequence, followed by the railways of foreign countries in which important British interests are held, and, lastly, the railways of other foreign countries.

Oilaulic Pumps and Presses.—

This is the title of a well-produced loose-leaf catalogue, a copy of which has reached us from John Mills & Co. (Llanidloes) Ltd., Railway Foundry, Llanidloes, Montgomeryshire. Its pages contain illustrations and particulars of a number of presses of different types

manufactured by the firm under the trade name of Oilaulic. The standard 50-ton electrically-driven horizontal press is of particular interest from the railway point of view in that it is equally adaptable for use by the locomotive, carriage and wagon, and permanent way departments, in each of which it has a wide range of application.

This standard press is entirely self-contained and is supplied either for bolting down as a stationary unit or mounted on wheels as a mobile one. In addition to its electrically-driven form, it is also manufactured for operation by compressed air, steam, or water power at from 60 to 100 lb. per sq. in. pressure. Presses of this type and capacity are used extensively in collieries, and by the railway companies. The catalogue provides illustrated particulars of a series of vertical presses and each is a self-contained machine in which the standard power unit is the Mills Oilaulic pump. This pump is of the high-speed multi-ram type, built into a single unit together with a low pressure rotor for rapid approach speeds. The pumps are designed to work against heads of from 1 to 3 tons per sq. in.

THE SCRAP HEAP

FIFTEEN G.W.R. CHAIRMEN

Benjamin Shaw ...	September, 1835—October, 1837.
William A. Sims ...	October, 1837—November, 1839.
Charles Russell ...	November, 1839—August, 1855.
Rt. Hon. S. Walpole ...	August, 1855—February, 1856.
Viscount Barrington ...	February, 1856—May, 1857.
F. G. B. Ponsonby ...	May, 1857—February, 1859.
Lord Shelburne ...	February, 1859—February, 1863.
Rt. Hon. S. Walpole ...	February, 1863—August, 1863.
Richard Potter ...	August, 1863—November, 1865.
Sir Daniel Gooch ...	November, 1865—October, 1869.
F. G. Saunders ...	October, 1869—July, 1895.
Viscount Emlyn ...	July, 1895—March, 1905.
Alfred Baldwin ...	March, 1905—February, 1908.
Viscount Churchill ...	February, 1908—January, 1934.
Viscount Horne ...	January, 1934—September, 1940.

Sic transit gloria mundi

* * *

During the night journey (from Glasgow), a knock came at my door and the attendant informed me there was an air raid. I thanked him and asked what one was supposed to do. "I have no idea," he said. "It's my instructions just to tell you there's an air raid." And so to sleep.—*Atticus* in "The Sunday Times."

* * *

NOISE OF THE SIREN

Now that it bids fair to become quite a feature of our national life, would it not be possible to impart a slightly more heartening note to the air raid siren? The extreme melancholy of the present woman - wailing - for - her - demon - lover warning seems to me to constitute a serious strain on the toughest moral. Having first soothed possible susceptibilities in the Northern part of these isles, could we not make use of the inspiring air of "The Campbells are Coming," which, while conveying a definite warning, at the same time implies a hearty defiance and a

certain zest for the fray? For the all clear I would suggest that we could hardly do better than "Who's Afraid of the Big, Bad Wolf."—*Mr. I. I. Whalen* in a letter to "The Times."

* * *

"DEFINITELY" MEANS "YES"
"Nowadays everybody seems to say 'definitely,' when they mean 'yes,'" commented Mr. Justice Humphreys in the High Court, when a witness constantly replied "definitely" to questions by his counsel. "It's B.B.C. English, my Lord," counsel ventured.

* * *

Lord Horne was a raconteur with a rich store of stories. One was of an Aberdonian porter, a student of Carlyle, who found a third class passenger in a first class carriage. The conversation went:

Porter: What gars ye loup in here?

Passenger: I didna loup. I went where I was put.

Porter: Noo, then, dinna seek refuge under a semblance of simplicity.—*From "The Evening Standard."*

* * *

HOME GUARDS AND BOOMERS

Whilst the performance of spare-time Home Guard duties means for many thousands of British railwaymen the introduction of a new phrase into the everyday vocabulary of the line, American railroads have had "Home Guards" for generations. In the U.S.A., the railroad man who found a steady job on a particular system and stuck to it became known as a "Home

Guard" to distinguish him from the "Boomer," who went from railroad to railroad—perhaps from one end of the continent to another—as fancy and the varying local demands for labour served him. Since the Depression, "Boomers" are but a memory.

* * *

Two women in a railway compartment argued about the window, and at last called the guard as referee.

"If this window is open," one declared, "I shall catch cold, and will probably die."

"If the window is shut," the other announced, "I shall certainly suffocate."

The two glared at each other.

The guard was at a loss, but he welcomed the words of a man with a red nose who sat near. Said he: "First open the window. That will kill one. Next, shut it. That will kill the other. Then we shall have peace."

* * *

RAILWAY BROADCAST IN AN AIR RAID.
Features of a "Round London" B.B.C. programme feature, transmission of which was continued to America during an air raid alarm on Saturday night, August 24, included the departure of a night express from Euston to the North whilst the warning was actually in operation. The commentator was Mr. Michael Standing. Mr. J. Harrison, Stationmaster at Euston, L.M.S.R., participated in the broadcast.

* * *

POSITIVELY NO DECEPTION!

"3.17 a.m. (Mondays excepted) Crewe to Birmingham conveys through carriage Crewe to Birmingham."—*From L.M.S.R. official pamphlet of passenger train alterations, August, 1940.*

OVERSEAS RAILWAY AFFAIRS

(From our special correspondents)

WESTERN AUSTRALIA

Special Trains for Relief Workers

For some time past considerable numbers of men have been engaged on unemployment relief works at various points along the main South Western Railway. These men are mainly married with homes in the Metropolitan Area (Perth and suburbs), and, hitherto, men visiting their homes at week-ends have travelled on open lorries distances up to 100 miles. To provide these men with safer and more comfortable transport, a train now leaves the furthestmost point (Brunswick junction) at 4.35 p.m. on Fridays, picking up additional workers *en route*, and arrives Perth at 8.30 p.m. On the return journey a special train leaves Perth on Sundays at 7.15 p.m. Special low return fares, averaging $\frac{1}{4}$ d. a mile are charged and a distinctive Government Workers ticket is issued by the departments concerned, on the different relief jobs instead of at railway stations. The fact that tickets can be obtained only on the job is an assurance that only genuine relief workers obtain the concessions.

War Efforts of Staff

The railway unions have demonstrated their patriotism in a practical way by making substantial contributions to free-of-interest war loans.

A patriotic Queen Carnival is also at present being organised to raise £15,000 to provide comforts for soldiers on active service, and the railways, with the consent and co-operation of the Commissioner, have entered a candidate. Committees throughout the system are working on behalf of the railway candidate—one of the office staff of the Chief Civil Engineer—and it is confidently expected that the fund will receive a very substantial benefit from the railway effort.

Another way in which the railwaymen, through the department, are helping Australia's war effort is by the purchase of war savings certificates. As a result of requests from members of the staff, the Commissioner agreed that employees desiring to purchase war savings certificates could do so by having fortnightly instalments deducted from their wages or salaries through the paysheets. In this way an employee may elect to have amounts ranging from 1s. to 20s. a fortnight deducted. The money thus obtained is used each fortnight to purchase the certificates, which are held by the department pending ultimate distribution.

CANADA

Greatly-Improved Earnings

Combined net earnings of the two Canadian railways for the first half of this year totalled \$28,836,088, nearly $6\frac{1}{2}$ times the figure reported for the

first half of 1939, and the highest recorded since the \$36,729,207 for the first half of 1929. As compared with two years ago, when the combined figure was a deficit of \$2,998,955, there is shown this year an improvement of fully \$31,800,000. Both systems have shared in this year's wide improvement. The Canadian Pacific figure of \$12,636,005 for the six months shows an increase of \$7,300,000, or 136 per cent. over a year ago, and the Canadian National reported for the first half net earnings of \$16,200,083, an improvement of \$16,700,000 over a year ago. For comparison, first half yearly figures for both railways together since 1929 are given below:—

	\$		\$
1940 ...	28,836,088	1934 ...	12,432,953
1939 ...	4,845,927	1933 ...	1,882,160
1938 ...	2,998,955*	1932 ...	4,731,509
1937 ...	14,928,102	1931 ...	4,556,168
1936 ...	9,266,040	1930 ...	19,500,593
1935 ...	8,241,083	1929 ...	36,729,207

* Deficit.

BRAZIL

Minimum Wage

May-day in Rio de Janeiro was celebrated by a huge gathering of the working classes in the stadium of the Vasco da Gama Football Club where the ceremonies were marked by the signing of a Decree-Law by President Vargas establishing a minimum salary for the greater part of the workers throughout Brazil. The object of the Decree is to guarantee the normal necessities of life, namely, food, clothing, shelter, hygiene, and transport. It applies to both sexes and is regulated by a scale of wages varying according to the calculated cost of living in the different States of Brazil. This, obviously, varies considerably over such a vast territory, but the scale approved is the result of extensive research by regional commissions which have been investigating conditions for some months past.

Widely-varying Minima

The minimum established is as low as \$90-000 (milreis) a month in such places as the interior of Alagoas, Rio Grande do Norte, and Sergipe, but a level of 200\$000 (milreis) a month is established in places like Rio Grande do Sul (capital) and Rio de Janeiro State Capital. The minimum fixed for the Federal Capital (Rio de Janeiro and suburbs) is 240\$000 (milreis) a month and it affects a large number of railway employees. Junior workers up to 18 years of age must receive not less than 50 per cent. of the salary paid to senior workers in the same zone or area.

The Decree further establishes that payment of salaries may not be less frequent than once a month, and it must be made up to the tenth day of the month next after that to which it refers. In the case of staff paid fortnightly, payment must take place not

later than five days after the period worked. In cases of bankruptcy or insolvency unpaid salaries have first claim on residues. An increase of 40, 20 or 10 per cent. must be paid on all established minima for occupations recognised as unhealthy in a maximum, medium, or minimum degree, respectively.

Employers are subject to penalties of fine for non-compliance with the Law which becomes operative on July 1 and will remain in force for three years, after which it may be modified or extended for a further similar period. The actual cost of compliance with the new Law on the railways is not yet known, but already some difficulty is foreseen in regard to the closing of paysheets and payment of staff up to the 10th of the month.

SPAIN

Rolling Stock Programme

In accord with the Decree of March 12, 1938, orders were given for 3,000 wagons, 120 carriages, and 30 brake vans, the estimated cost, to be advanced by the State, being 64,500,000 pesetas. The same Decree provided 4,500,000 pesetas for axle renewals and 20,000,000 pesetas for 300 km. of permanent way material. It also confirmed the earlier proposal of June 15, 1934, authorising an advance of 60,000,000 pesetas for the construction of 150 locomotives, the first instalment of a total of 750, to be built over a period of five years. Orders for the locomotives were distributed between the Babcock & Wilcox Spanish subsidiary of Bilbao (40), the Maquinista Terrestre of Barcelona (55), the Euskalduna Company (40), and the Devis Company (15). At present 63 locomotives have been delivered, 20 to the Northern of Spain, 30 to the Madrid, Zaragoza & Alicante, and 13 to the Western-Andaluces, and of these 56 are already in service. Those for the M.Z.A. include the first of the "1800" Class, type 4-8-2, built by the Maquinista Terrestre Company, which gave such good results in their recent trials. They were the subject of an illustrated article in THE RAILWAY GAZETTE of August 16 (p. 175). The Beasin Company is responsible for the construction of most of the wagons, which are all of a standard 20-ton type, and delivery is expected to be completed during the present year.

Railway Orphanage

The principal railway companies have opened a subscription among their staff, with a minimum of 50 centimos, to help to defray the cost—estimated at 1,703,000 pesetas—of reconstructing the buildings and restoring the installations of the Railwaymen's Orphanage in Madrid. During the fighting round Madrid the building was destroyed and much of the equipment lost. Of the 3,611 orphans on the registers of the institution, 600 were housed in the Madrid building and 300 at Malaga.

ROAD TRANSPORT SECTION

This section appears at four-weekly intervals

Street Refuge Lighting

WHETHER a local authority is bound to light a street refuge during blackout hours was the question at issue before the Court of Appeal on July 30 in *Wodehouse v. Levy and the St. Marylebone Borough Council*. The plaintiff was injured in a collision at 12.55 a.m. on September 2, 1939, between the taxi in which he was travelling and an unlighted street refuge near Marlborough Road station. He claimed damages against the owner and the driver of the taxi and against the borough council, alleging a breach by the council of its duty under the Metropolis Management Act, 1855, to light the refuge. The Lighting (Restrictions) Order (No. 1098 of 1939), which came into operation on September 1 last, contained a general prohibition against showing any light during the hours of darkness; this prohibition not to apply to lamps indicating obstructions upon the carriageway of any road provided that they were so screened as to prevent light being thrown upwards. Mr. Justice Cassels in the Court below had held that there had been negligence on the part of the driver and that the borough council had been guilty of a breach of duty both statutory and at common law in failing to light the obstruction. The council appealed and the Court of Appeal unanimously reversed the decision of the Court below. Lord Justice MacKinnon said that on the authority of *Greenwood v. Central Service Co. Ltd.* there was no obligation on the council to light a street refuge because its only obligation to light was imposed by the Act of 1855 which had been temporarily repealed by the Lighting (Restrictions) Order. Nor could he find that there had been any lack of reasonable care on the part of the council.

Aldershot & District Traction

THE effect of the war on road transport companies was well illustrated by Mr. Sidney E. Garcke, Chairman of the Aldershot & District Traction Co. Ltd., at the annual general meeting on August 13. The accounts he presented to his shareholders covered nine months of war and the area served by his company naturally experienced greater activity during that period. It was not surprising, therefore, that the revenue of the company was higher by about a third than that earned for the previous year. In recommending a dividend of 10 per cent. Mr. Garcke explained that he was being guided by experience gained during the war of 1914-19 when affluence proved to be temporary. Violent fluctuations in earnings occurred and the dividend, which had been 10 per cent. became 40 per cent. in 1915, but two years later was passed entirely. In the present war bus traffic has increased in some areas and decreased in others, and, while certain undertakings are experiencing a serious setback, others are embarrassed by the heavy traffic they are required to carry. Mr. Garcke expressed a view that will be widely shared when he said that it was perhaps unfortunate that in a group of similar businesses constituting a somewhat closely knit industry, undertakings that prospered by the redistribution of activity should be liable to heavy excess profits tax, while the units from which the traffic had been diverted might even suffer loss on working.

Important New Sorting Depot in New York

THE largest sorting and delivery depot in the U.S.A. for handling express shipments was opened in New York by the Railway Express Agency on July 15. It occupies the entire block between 41st and 42nd Streets, and between 11th and 12th Avenues, formerly used by the New York Central System, and thus is a parallel to the similar depot opened in London on November 4, 1935, by Pickfords Limited

at Willow Walk on ground once used as a goods yard by the Southern Railway.* A further parallel is that the New York sorting station has no railway siding connections, as it is being used chiefly for sorting express shipments brought in by collection vehicles and re-assembling them as loads for delivery to railway termini in New York City and in New Jersey. It will be recalled that the Pickford's depot at Willow Walk is also without rail connections, although immediately adjacent to Bricklayer's Arms goods station, as its function is to sort the contents of collection vehicles unloaded at reception banks and to re-load them for ultimate delivery either by trunk road service or to railway depots, docks, and so forth. The importance of the New York depot may be gauged from the fact that New York express shipments comprise approximately 25 per cent. of the total in the U.S.A. The new depot is intended to serve territory on the west side of Manhattan from 28th Street to 59th Street, an area which includes the main portion of the garment industry. The depot has been designed especially to handle expeditiously packages of the type usually dispatched by the garment trade and it will occupy an important position in the total operations of the Railway Express Agency.

The Omnibus Corporation of the U.S.A

THE extensive use of buses for urban transport in the U.S.A. is a development of the past two decades. During last century the bus was never an important unit of American transit, for U.S.A. towns that grew sufficiently large to justify the use of such vehicles in their horse-operated days were usually equipped with tramways. Accordingly there are comparatively few really old-established bus undertakings, and the Fifth Avenue Coach Company of New York occupies quite an exceptional position by reason of its antiquity, having served the famous Avenue in Manhattan Island from which it takes its name ever since 1885. Objections from the property occupiers on that fashionable thoroughfare have always been sufficiently strong to prevent trams being laid. At the present time the Fifth Avenue Coach Company is one unit of a very much larger financial organisation known as the Omnibus Corporation, which is purely a holding company controlling some 1,800 motor-buses operated by associated companies. The Omnibus Corporation owns 100 per cent. of the stock of the Chicago Motor Coach Company; 92.2 per cent. of the Fifth Avenue Coach Company; and 49.9 per cent. of the New York City Omnibus Corporation. The Fifth Avenue Coach Company itself owns about 2 per cent. of the N.Y.C. Omnibus Corporation, but the remaining shares of both companies are distributed among smaller holders. The Fifth Avenue Coach Company occupies an unusual position (apart from its antiquity) by reason of the various distinctive features of its service. For example, it operates double-deck vehicles in a country where the single-decker is almost universal, and charges a 10-cent fare in a city which in other respects has adhered rigidly to the 5-cent fare. The company provides what it calls a "semi de luxe service," meaning that every passenger has a seat and no standing is permitted, smoking is allowed on the upper deck, and the company mans its buses with both drivers and conductors, providing what is believed to be the only two-man bus operation in the country on urban routes. Fifth Avenue buses were of course horse-drawn in the early years but, after unsuccessful experiments with battery vehicles, petrol motors were introduced in 1907. In early years foreign chassis were imported, some from Great Britain but mostly De Dion from France, and it was not until 1915 that the company produced its first "all-American"

* This depot was fully described and illustrated in the Road Transport Section of THE RAILWAY GAZETTE for November 8, 1935

double decker, of which both chassis and body were built in the company's own shops. During 1915-1916 the earliest experiments were made with enclosed upper decks. The average passenger journey on the Fifth Avenue vehicles is found to be as long as $6\frac{1}{2}$ miles. Since 1932 the competition from the new Municipal Independent Subway (or underground railway) with its 5-cent fare has reduced the Fifth Avenue Company to a position where it now operates at a slight loss.

The New York City Omnibus Corporation occupies an entirely different position, for it is an organisation formed to replace the old tramcar routes of the New York Railways Corporation, an undertaking which was in a very poor financial position, and was served by obsolete and almost decrepit equipment, when the bus interests secured control and in 1935-1936 abandoned tramlines in favour of single-deck buses. The company owns the Madison Avenue Coach Co. Inc. and the Eighth Avenue Coach Corporation, both of which are operated by the parent company as parts of one organisation. The fleet of single-deck buses consists of vehicles seating 32-40 passengers and providing standing accommodation for as many more in the rush hours. The company's route mileage is 77, about a quarter of which is through such congested areas that the average speed of the services is little more than 6 m.p.h. Last year the company carried 268,100,000 passengers at a 5 cent fare. The Chicago Motor Coach Company maintains 148 route miles of which only 33 are congested. The company charges a 10-cent fare, which is the same as the elevated railway in Chicago and compares with the 7-cent fare on the tramcars. That the slight additional fare does not prove a drawback in Chicago is shown by the fact that during the past five years the Chicago Motor Coach Company has increased its business by 38 per cent., while the tramcar and elevated railway lines have both suffered a reduction in traffic.

Peak load difficulties of the group are shown by the differences in total vehicles required at different times of the day. The New York City undertaking, for example, needs 531 buses at midday and 728 at peak times, but in connection with the latter figure it must be recalled that a 40-seat bus also accommodates 40 standing passengers. The Fifth Avenue requirements range between 175 at midday and 303 in the evening peak. The total rolling stock of the Omnibus Corporation group is 1,800 vehicles, as already mentioned, and this figure includes 169 diesel-engined buses with hydraulic transmission, all single-deckers and with 40 to 45 seats. They average 4.49 miles a gallon of oil fuel, compared with 2.66 miles a gallon of petrol in New York; the Chicago comparison is 5.14 to 2.90. Incidentally, the Chicago bus seats are 2 in. wider than the New York seats because it has been found that the average westerner is a broader man. The organisation employs over 2,500 drivers (including spares) and there are more than 400 conductors on the Fifth Avenue system. In New York the future for all street traffic is overshadowed by the activities of the present municipal administration in assuming control of the urban transit; the recent unification of the B.M.T. and I.R.T. underground systems with the Municipal Independent Subway formed the subject of a leader at p. 87, July 26 issue. At the present time the Third Avenue Railway system operates the only remaining tramcars in Manhattan Island and is preparing to convert its undertaking to motorbus operation. The New York City Omnibus Corporation is subject to a concession which runs for ten years from 1935, an unusually short term accepted as a means of preventing further litigation in connection with allegations that the New York City Omnibus franchises had been obtained by "corruption and collusion." Should the municipal authorities decide to do so, they may exercise their option in 1945 of cancelling the N.Y.C. franchises and paying \$5,000,000 as compensation. In Chicago there is also the possibility of unification, to which we referred in the article published at pages 772-3 of our May 31 issue; here the proposal is to merge the tramways and elevated railways into a proposed Chicago Transit Company. At the present time there is no suggestion of compelling the Chicago Motor Coach Company to enter the group; so that, were it to do so, it could presumably name its own terms.

Concrete Barges for Emergency Bridges

A SUGGESTION for temporary bridges which could be quickly erected across British rivers has been prompted by the article describing the Lake Washington floating bridge in our issue of July 19. The illustrations accompanying the article show a continuous chain of pontoons, the method of anchoring and the concrete construction of each pontoon, and it is suggested that concrete barges serving as pontoons, over which a temporary road could be laid, might be constructed and moored in groups at suitable points ready for immediate dispersal to any required site. On the Thames at London, for example, two, or at the most three, sets of pontoons should prove adequate even in the most severe emergency, and would be less costly and easier to operate than the methods usually adopted in the case of temporary bridges. These require a complicated mass of falsework with which to provide the necessary head-room for river traffic, but the pontoon bridge can be so designed as to provide a moving section which could be opened to river traffic when needed. On tidal rivers the question of approaches is one which could be answered readily by the use of self-adjusting ramps, such as can be found on most landing stages built by tidal waters. The use of concrete barges is advocated on the grounds of economy in order to conserve other scarcer and imported materials. It is also claimed that concrete will withstand the hard wear demanded of pontoons more readily than will other materials; and that the ingredients for concrete making are available on or near the banks of most rivers. An incidental but important advantage is that the construction and use of these barges would give invaluable experience and would enable operatives to become more proficient in concrete barge and ship construction in readiness for the time when such vessels might be needed.

Publications Received

The Motor Transport Year-Book and Directory (Garcke). Volume 24, 1939-40. Edited by Frederick C. Garrett. London: Electrical Press Limited, 60, Kingsway, W.C.2. $8\frac{3}{4}$ in. \times $5\frac{1}{2}$ in. \times $2\frac{1}{2}$ in. 786 pp. Price 30s. net.—This essential reference work of the road motor industry was founded in 1916 during the last war, and its early volumes were of quite modest scope and extent. An approximate indication of the growth and importance of the motor transport industry may be gained from the mere bulk of the present volume which comprises no fewer than 786 pages. In reviewing the editions that appeared in recent peacetime years, we have paid deserved tribute on more than one occasion to the indispensable niche filled by "Garcke," and the production of the present edition at the end of the first year of the present war emphasises more than ever the good work of the editor and publishers in producing so comprehensive and accurate a survey.

The general contents of the book are on the same lines as in previous years, but the road transport organisation section, which deals with law and regulations, has been specially revised this year in view of the many Emergency Powers orders and regulations which have been brought into force as a result of war conditions. With the ever-changing situation of wartime legislation, it is impossible that this section should be thoroughly up to date, but its encyclopaedic method of presentation both facilitates reference and assists manuscript annotations by users.

The editor must have been faced with a problem of no little complexity in deciding exactly how much revision of statistical and other information was advisable in present circumstances, but he seems to have solved this problem with considerable skill, and it is safe to say that few, if any, up-to-date details are lacking, excepting those deliberately omitted on grounds of policy. A valuable supplement is a large folding map (scaled about 23 miles to the inch) showing the Regional Transport Areas under the defence emergency organisation; this map was issued separately some little time ago, price 2s. 6d., by the Electrical Press Limited, as was noted at page 637 of our May 3 issue.

A Central Garage for London Transport

The new garage in Gillingham Street, Victoria, is the first combined bus and coach garage in inner London. It has accommodation for 100 buses and 70 coaches

IT has been an accepted feature of motorbus operating policy in the Metropolitan area ever since the introduction of the motor vehicle that garages should be located on the outskirts of London. Doubtless the price of property has had something to do with the matter in earlier years, but the main reason has always been to reduce dead mileage, as the trend of traffic is inward from the suburbs to

material used in the construction of the building included 3,200 cu. yd. of concrete, 300 tons of steel, 400 sections of slating for roof tiling, and 450 yd. of asphalt for roof covering.

The most modern types of plant and equipment have been installed for servicing and maintaining the vehicles allocated to the garage. Fuel and petrol are stored in under-

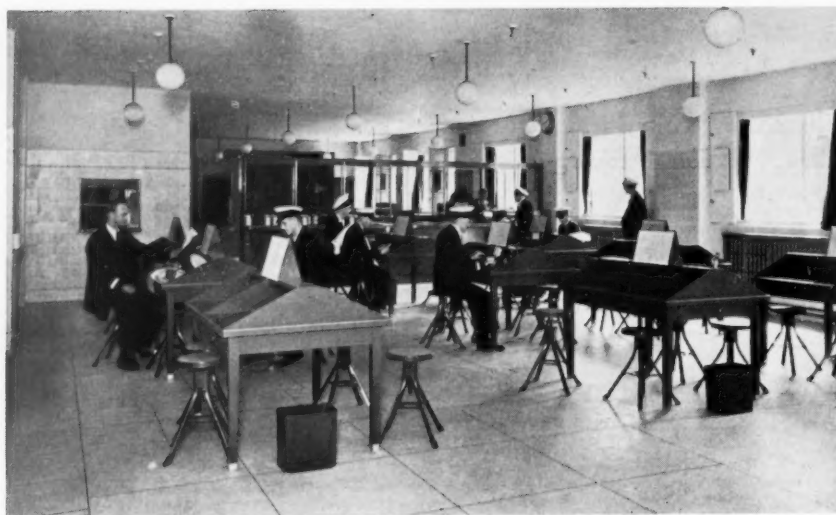


General view in Victoria garage, London Transport, showing buses parked ready for service

the Central Area in the morning, and practically all the late-night traffic is the homeward movement from the West End theatres and restaurants. Particular interest attaches, therefore, to the new Victoria garage of the London Passenger Transport Board, in Gillingham Street near Victoria station, as it is the first combined bus and coach garage in inner London. It is officially stated that this garage has been built because of the increasing necessity for garaging and servicing facilities for buses and coaches in the Central Area, and also to provide a lay-over. Provision is made on the ground floor for 100 buses used on in-town routes to be garaged, washed, and kept in running order, and buses not needed in service during the middle of the day are parked there to save fuel. In normal times 70 coaches used for private hire work will be kept in the basement, thus saving fuel in bringing coaches from the more distant garages, but at present the basement is being used by the Westminster City Council as a public air raid shelter.

The site measures approximately 37,000 sq. ft. Work on excavation was begun in March, 1938, and 30,000 tons of ballast were removed. The construction of the garage was begun in August, 1939, and the building was handed over to the operating department early in March of the present year; it was opened on March 20 in time for the Easter holidays. The building, which is of reinforced concrete faced with bricks, consists of a ground floor, approximately 350 ft. long and 128 ft. wide, and a basement 230 ft. long and 128 ft. wide. Access to the basement is gained from the ground floor by ramps on each side of the garage. The quantities of

ground tanks and are drawn for use in the vehicles by means of power pumping units, each driven through a Texrope drive from a 3 h.p. motor inside the pump room. Three lines of vehicles can be serviced at the same time from two islands and fuel is delivered to the vehicles by automatic cut-off nozzles. Special fume removal pipes and indicators, and emergency stops for pump motors, are also fitted. While this operation is taking place, oiling is done by two separate but identical systems. One permits the use of diesel engine oil, while the other supplies petrol engine oil. The pumping units are in the pump and switch room. Each system has a lubricating oil dispensing unit driven by a $\frac{3}{4}$ h.p. motor, which extracts oil from one of the two adjacent underground tanks. These tanks can be fitted with electric immersion heaters to warm the oil, if necessary. The oil passes from the pump at a pressure of 100 lb. a sq. in. to overhead pipes, from which are hung drop hoses ending in special metering nozzles for use on the servicing islands. The dispensing units are capable of pumping 6 gal. of oil a min. at the pressure of 100 lb. a sq. in. Also situated in this area and coming from the pump and switch room is a greasing plant. It consists of one-cwt. capacity fixed grease dispensing unit, operating on compressed air at 200 lb. a sq. in., and this pressure is supplied from an adjacent air compressor. From this appliance grease is pumped to an overhead pipe line and distributed to drop hoses. Each drop hose is fitted with a special grease delivery gun, equipped with a 4-volt spot light which aids the operator in sighting various concealed greasing nipples on the chassis.



Left: General view of the
conductors' room



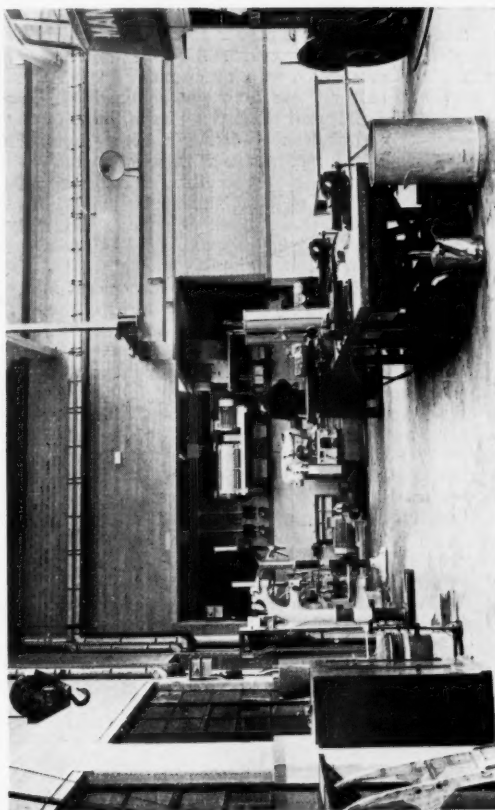
Right: Staff recreation room



Left: Staff inspecting duty
schedules



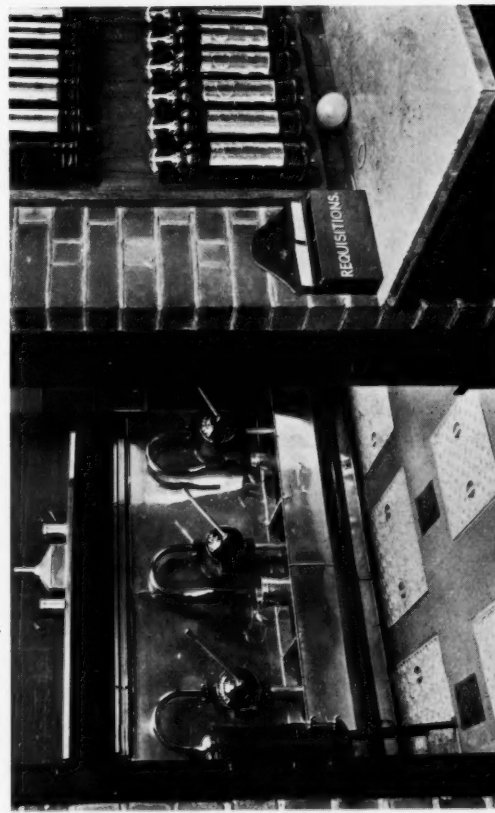
Buses over pits with pit-floor-level approach



The workshop



Bus washing plant at Victoria garage



The oil store

VICTORIA BUS AND COACH GARAGE, GILLINGHAM STREET, LONDON TRANSPORT

In the pump and switch room is an air compressor which emits air at a pressure of 200 lb. a sq. in. A pressure switch is incorporated in the plant, which at a maximum of 200 lb. automatically stops the motor. Air points at reduced pressure of 90 lb. a sq. in. are installed in the inspection pits. Shops, fitters' benches, and also the pneumatic lifting hoist and sprinkler installation are incorporated in this system. The run-in area on each side of the servicing islands has three pairs of vacuum points for cleaning the floors of buses, connected by a 7 in. overhead main to an exhaust in the basement. The filter receiver has a capacity of 70 cu. ft. and it can cope adequately with any fluctuation in the amount of waste which has to be handled. Incorporated in the garage walls are 30 in. ventilating fans and extracting shafts. The six fans, driven by 0.8 h.p. motors, exhaust air at the rate of 7,700 cu. ft. a min.

Details of plant installed in the machine area are as follow: General purpose screw-cutting lathe, driven by a 4 h.p. motor; back-gear drill, driven by a 2 h.p. motor; sensitive drill, driven by a $\frac{3}{4}$ h.p. motor; double-ended grinder, with 12 in. x 2 in. wheels, driven by a 2 h.p. motor; hand-operated press; Bradbury brake shoe-relining machine, complete with jigs and tools, and incorporating a dust exhausting fan and ducting, driven by 1 h.p. motor, and with the exhaust fan served by $\frac{1}{2}$ h.p. motor; high-pressure air compressor for filling air bottles (which has a capacity of 1 cu. ft. of air at 1,800 lb. a sq. in. in 15 min.), driven by a 7 $\frac{1}{2}$ h.p. motor. Also situated in the machine area is a vacuum plant coupled direct to a 4 h.p. motor for cleaning upholstery.

Near this area and extending across the breadth of the garage is a communicating pit, from which branch at regular

intervals seven inspection pits. They are tiled, and are lighted by gas-proof, prismatic fittings, recessed at an angle in the pits. Heating is supplied to the pits by pipes controlled by a main valve in the system. Over the communicating pit, extending its entire length, is a travelling swivel 1-ton jib crane. In line with the inspection pits is a series of shops for the use of coppersmiths, electricians, painters, and coachmakers. A washing gantry also is installed, which will take two buses, serviced at high level, with pressure hoses and nozzles. There are offices in this area for the use of the garage supervisory staff.

The boiler house is in the basement and supplies the whole of the heating to the garage shops and the various offices. In this boiler room is a large gravity-fed steel boiler for winter use, with a capacity of 1,250,000 B.T.U. an hour. There is also a small boiler of similar design for summer use, which supplies heating on a separate circuit for certain offices, canteen, kitchen, and washers' drying room. For domestic hot water supply, three calorifiers are used. The two boilers are automatically controlled for temperature by thruster-operated dampers and thermostats. Two hot water circulating pumps are driven by 1 h.p. and $\frac{3}{4}$ h.p. motors. A turbine for collecting bus tickets from the servicing area is also in the basement boiler room, and is driven by a 40 h.p. motor. To prevent petrol fumes polluting the air, six petrol detectors are situated in the basement, and, in the event of the fumes reaching a certain density, the detectors ring an alarm bell.

Offices for the use of the engineering staff are on the garage floor level, and, above this, reached by a short staircase, are the offices used by the operating staff. Adjacent to the latter offices are a canteen and sports room.

Road Vehicles: New Registrations in Great Britain from February to July

Description	Feb., 1939	Feb., 1940	Mar., 1939	Mar., 1940	Apr., 1939	Apr., 1940	May, 1939	May, 1940	June, 1939	June, 1940	July, 1939	July, 1940
Cars taxed on horse-power												
Exc. Not exc.												
10 10 h.p.	15,980	2,950	27,112	5,093	18,052	3,540	20,961	2,751	20,221	1,460	2,617	18,987
15 15 h.p.	5,431	735	8,900	1,160	5,437	851	5,483	606	4,667	270	613	3,699
20 20 h.p.	1,112	86	1,709	168	1,092	167	973	123	851	73	306	628
25 25 h.p.	395	33	691	86	436	52	359	55	335	24	119	269
30 30 h.p.	438	33	717	78	448	52	360	51	318	43	150	274
Electrically-propelled	0	0	235	25	129	26	124	16	106	19	64	105
Miscellaneous	0	0	0	0	0	0	0	0	0	0	0	0
Total	23,509	3,849	39,264	6,611	25,645	4,688	28,268	3,603	26,502	1,891	3,874	23,967
Cycles	3,112	619	6,449	1,714	5,331	2,276	6,495	2,979	5,188	3,043	3,299	6,109
Hackneys												
Exc. Not exc.												
8 8 seats	140	28	392	113	270	67	332	16	240	4	40	222
40 40 seats	120	53	429	123	353	128	667	92	381	69	121	236
40 40 seats	170	95	289	150	163	90	258	176	319	213	95	154
Total	430	176	1,110	386	796	285	1,257	284	940	286	256	612
Tractors												
Agricultural	14	18	6	5	15	21	61	3	15	11	12	18
Showmen's	0	0	0	0	0	0	0	0	0	0	0	0
Other	16	12	19	11	14	28	16	31	23	34	24	21
Total	30	30	25	16	29	49	77	34	38	45	36	39
Agricultural engines (5 h.p. class.)	674	1,578	885	2,185	828	2,213	730	1,812	890	1,505	1,966	942
Exempt												
Government-owned	1,411	174	1,662	394	1,608	717	3,220	106	1,767	133	404	3,290
Other	124	405	119	375	143	178	168	351	144	143	185	144
Total	1,535	579	1,781	769	1,751	895	3,388	457	1,911	276	589	3,434
Goods												
Agricultural vans and lorries	66	47	107	53	68	52	107	33	98	13	20	105
Showmen's special vehicles	0	0	2	0	1	0	0	0	0	0	0	2
Local authorities (watering and cleansing)	4	6	7	1	7	2	11	1	8	0	1	7
Other goods vehicles												
Weight unladen												
Exc. Not exc.												
12 cwt. 12 cwt.	773	421	1,203	643	654	359	701	249	765	155	176	818
24 tons 24 tons	3,429	1,522	5,454	1,925	3,384	1,257	1,137	4,135	4,065	994	1,082	5,136
5 tons 5 tons	299	225	449	217	354	235	419	208	363	156	213	409
5 tons	46	38	82	65	51	40	57	45	765	30	53	67
Total of other goods vehicles	4,547	2,206	7,188	2,850	4,443	1,891	5,312	1,639	5,269	1,335	1,524	5,612
Total	4,617	2,259	7,304	2,909	4,519	1,945	5,430	1,673	5,375	1,353	1,545	5,726
Grand totals	33,907	9,090	56,821	14,590	38,897	12,351	45,600	10,242	40,844	8,399	11,565	40,829

THE RAILWAYS OF OTAGO

The first contract for the construction of a railway line in New Zealand, a short section from Christchurch to Ferrymead (part of the Lyttelton line), was let in 1860, and this line was opened three years later. In 1870, due to the private enterprise of Messrs. Proudfoot and Oliver, work was begun on the first railway in Otago—that between Dunedin and Port Chalmers. Two locomotives were imported for use on this line, namely, the *Josephine* and the *Rose*. The former was assembled on the Port Chalmers wharf, and it was a great day in the history of the city when, on September 18, 1872, the *Josephine* connected the town with the port. Her first freight was three hogsheads of beer, but she settled down to real work a few days later when she conveyed the cargo of the *May Queen* from Port Chalmers to Dunedin at the rate of 4s. 6d. a ton. The Port railway was formally opened by the Governor, Sir George Bowen, on December 31, 1872, and sold to the General Government in 1873 for £210,000. It was evident that railways were a necessity to induce settlers to take up, clear, and develop land. Accordingly, Sir Julius Vogel inaugurated a vigorous public works policy whereby the Government took control of all railway developments, and the standard gauge was fixed at 3 ft. 6 in.

What is called the South Island Main Trunk Line, which connects Christchurch with Dunedin and Invercargill and develops the Dominion's greatest agricultural area, the Canterbury, Otago, and Southland Plains, was built in sections. These were let to various contractors, and were opened at

various dates; the last rail on the north line was laid at Goodwood on August 26, 1878, by Mr. W. N. Blair, the Engineer-in-Charge of Public Works for the South Island. This line was officially opened by the Governor, the Marquess of Normanby, on September 6, 1878, and the Dunedin—Invercargill section on January 22, 1879. In the meantime, several branch railways were begun. Milton was connected by rail with Lawrence in April, 1877, and Mosgiel with Outram in October of the same year. The Otago Central line was expressly designed to develop a district considered sterile by many who could not foresee its potentialities.

Today the railways are the Dominion's most valuable property, the sum of approximately £59 millions sterling being invested in them. Having played a major part in opening up the country, they are now all the more a vital necessity for transporting the great quantities of produce conveyed to the seaports for shipment to Britain and other countries. Carriage of livestock is also a very important part of railway operation in New Zealand, sheep traffic in particular reaching huge proportions. Furthermore, the New Zealand Government Railways Department pioneered the use of insulated wagons, thus materially assisting the freezing industry, first successfully developed commercially in Otago. From certain of the foregoing historical facts we are indebted to a brochure entitled "Yesterday and Today in Otago," published under the auspices of the Court Committee of the Otago Provincial Centennial Council.

EXERCISING A RIGHT, AND ITS COST

The main line of the New York Central Railroad crosses a creek running into the Hudson river near Peckskill by a 60-ft. lifting-span bridge, built to allow tugs and barges to enter the creek, load sand at a quarry, and return to the Hudson. The quarry became exhausted about eight years ago and the span has not been opened for water traffic since. For this reason, apparently, ordinary double line track had been laid over it, unbroken at the ends of the span.

Recently, a Mr. Douglas, owning property and a 22-ft. motor launch on the creek, decided to take advantage of the present control by the War Department over all navigable waters in the U.S.A., and to request that Department to have the bridge opened for him twice on a certain day, at 10.30 to let the launch out, and at 1.30 on its return from a pleasure cruise on the Hudson, as briefly recorded in our issue of August 16.

A permanent way gang was ordered to take up 240 ft. of track and relay it at 10.30 for the Empire State, Mohawk, and Knickerbocker expresses, and many other trains to pass in the three-hour interval before the process had to be repeated for the return of the launch. As the gang had to stand by for the whole period and was supervised by the Division and Assistant Division Engineers and Superintendent of Bridges, it is estimated that this exercise of his rights by a private individual cost the railroad or the Government about \$600, say £150. Another view is, of course, that it provided that much extra cash for the railroad employees.

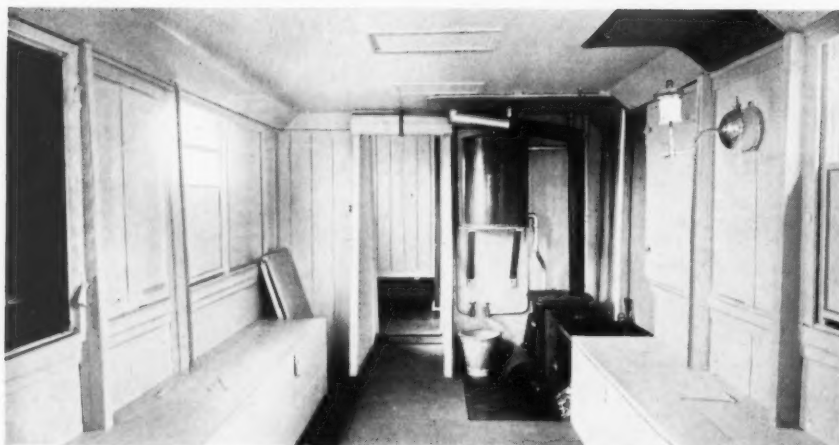


Lifting a bridge carrying the New York Central main line over a creek near Peckskill to let a small launch out for a cruise

British Railways and the War—35



Above: A.R.P. mobile cleansing unit of the L.N.E.R., of which 30 are being equipped from old passenger carriages and brake vans



Left: Dressing room in an L.N.E.R. cleansing unit



Entrance to store room with double air lock



Undressing room and fittings in one of the A.R.P. cleansing units of the L.N.E.R.

RAILWAY NEWS SECTION

PERSONAL

The Minister of Aircraft Production has appointed Mr. A. J. Newman to be Director of Machine Tools, with responsibility for the supply of machine tools to the Ministry of Aircraft Production.

The Minister of Home Affairs of Northern Ireland has re-appointed, for a further period of one year from August 23, the following part-time Members of the Northern Ireland Road Transport Board: The Earl of Enniskillen, Mr. James R. Haslett, Mr. Samuel Haughton, Mr. David Wilson Smyth, and Mr. James E. Wilson.

Mr. Bernard Riley, General Manager of British Timken Limited, tapered roller bearing manufacturers, is to marry Miss Beryl Johnson on September 14 at Sutton Coldfield Parish Church.

Mr. Thomas Byrne, Secretary to the Drogheda Harbour Board, has tendered his resignation after 49 years of service. Mr. Byrne, whose resignation has been accepted with regret by the Commissioners, is 93 years old.

We regret to record the death on August 11 at Pasadena, Cal., of Mr. Arthur Henry Fleming. Mr. Fleming was born at Milton, Ontario, in 1856, but went to the U.S.A. at the age of 21 where he attained international prominence as a scientist and philanthropist. It was Mr. Fleming who endowed and reconditioned the famous railway carriage in which the Armistice between the Allies and Germany was signed in 1918. As recorded in our issue of June 28, the railway carriage was originally dining car No. 2419 belonging to the International Sleeping Car Company, and after being on show in Paris for some time, was sent to a specially-selected site in Compiègne where Mr. Fleming not only had the carriage restored but also caused a shelter to be built in which to house it. A picture of this shelter was shown in our issue of July 5. The Franco-German Armistice was signed in the same carriage on June 21 last, and it has been since reported that the carriage has been removed to a temporary resting place in Berlin.

We regret to record the death on September 3 of the Rt. Hon. Viscount Horne, P.C., G.B.E., Chairman of the Great Western Railway since February, 1934. Robert Stevenson Horne was born in Scotland in 1871, and was educated at George Watson's College, Edinburgh, and at Glasgow University. He was admitted an Advocate of the Bar of Scotland in 1896, at which he

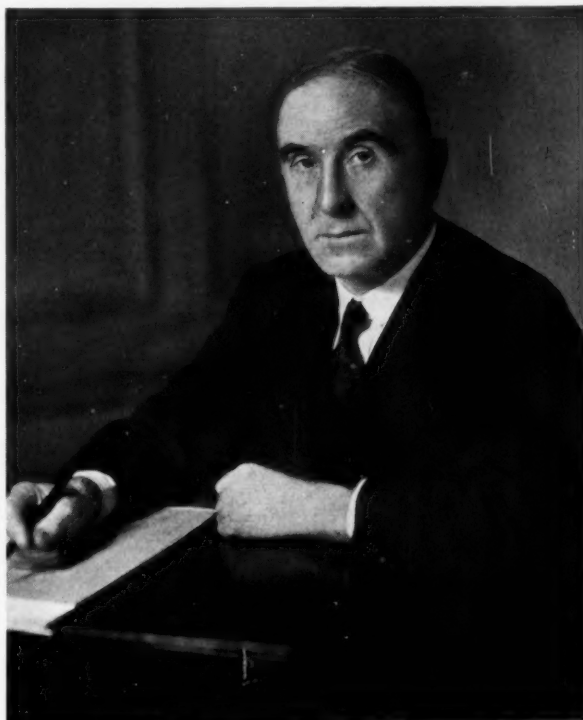
1918. In 1919 he was appointed Minister of Labour; from 1920 to 1921 was President of the Board of Trade; and from 1921 to 1922 was Chancellor of the Exchequer. He was sworn as a Privy Councillor in 1919, and created a G.B.E. in 1920. In 1923 Sir Robert was elected to the board of the Great Western Railway to fill the vacancy caused by the death of Mr. J. G.

Griffiths. In the same year Sir Robert became a Director of the Underground Electric Railways Co. of London Ltd. Among the directorships which he held, the most important, apart from the G.W.R., included the Suez Canal Company, Lloyds Bank Limited, Imperial Smelting Corporation Ltd. (of which he was Chairman), P. & O. Steam Navigation Company, and the Commercial Union Assurance Co. Ltd.

We regret to announce the death on August 25 at Clermont Ferrand, of M. Edouard Michelin, who, with his brother, André, founded the famous French firm of pneumatic tyre manufacturers. M. Michelin was 84 years of age. The Michelin firm was responsible for the successful application of pneumatic tyres to railway work, and it may be recalled that in 1932 a pioneer Micheline, as these self-propelled railcars are called, was tried on the L.M.S.R. and the Southern Railway. In that year the first Michelines were set to work in France, but since then the original, somewhat crude form has been developed and improved until up to the outbreak of war hundreds of Michelines were running with complete success on railways in various parts of the world. Their most notable characteristics were rapid retardation and extreme quietness of running.

Mr. Morton B. Duggan of Chicago, Chief Rate Expert in the Passenger Department of the Illinois Central System, has been appointed Chairman of the Southern Passenger Association.

It is announced that Mr. G. R. T. Taylor has resigned his seat on the boards of Vickers Limited and the English Steel Corporation Limited, in view of his many other interests. Mr. Taylor will retain his directorship of Taylor Bros. & Co. Ltd., a subsidiary



Elliott

The late Viscount Horne of Slamannan

Chairman, Great Western Railway
1934—1940

practised for many years. In 1910, on the recommendation of the Lord Justice-General of Scotland, he was made one of His Majesty's Counsel in Scotland. He was created a K.B.E. in 1918, the same year in which he became Unionist M.P. for the Hillhead Division of Glasgow, a seat he held until 1937 when he was created first Viscount Horne of Slamannan. Sir Robert Horne was a Lieutenant-Colonel in the Royal Engineers during the last war and became Assistant Inspector-General of Transportation in 1917; Director of Department of Materials and Priority, Admiralty, in 1917; Director of Admiralty Labour Department in 1918; and Third Civil Lord of the Admiralty in

[G. Fry]

of the English Steel Corporation. Mr. Taylor is Chairman of International Combustion Limited, and the Trafford Park Company (owner of 33 miles of 4 ft. 8½ in.-gauge railway); a Director of the L.M.S.R. and the West London Extension Railway, and a Member of the Birmingham Canal Navigations.

The Swiss Federal Railways Board has appointed M. Wilhelm Schwalm to succeed the late Mr. Ernest Hess as Chief Commercial Manager of the system. M. Schwalm, who has hitherto been Deputy Chief Commercial Manager (Goods), was born in November, 1879, and entered the railway service in 1896. Until 1902 he gained valuable experience in the various outdoor branches of the service. In September of that year, however, M. Schwalm was posted to the Goods Rates Office at headquarters and, in October, 1914, became superintendent of that office. When the Passenger and Goods Rates sections were fused to form the Commercial Manager's Department, he was entrusted with the supervision of the goods side of it, until he was promoted to be Deputy Chief Commercial Manager in 1927.

Mr. A. A. Phillips, V.D., who as announced in a subsequent column, has been appointed to officiate as Chief Commercial Manager, North Western Railway, India, was born on August 18, 1889. He was appointed to be an Assistant Traffic Superintendent on the Indian State Railway establishment in November, 1912, and was posted to the N.W.R.; he was promoted to be District Traffic Superintendent in July, 1924. From November, 1929, to March, 1931, he was Commercial Instructor at the Railway Staff College, Dehra Dun. After holding various other appointments, Mr. Phillips was appointed to be Divisional Superintendent of the important Karachi Division in July, 1938, the position he vacated on May 24 to become Chief Commercial Manager of the whole system. He succeeds Mr. Hawkes whose portrait and biography were published in our issue of August 9. Mr. Phillips, who was in the Oxford University O.T.C. from 1908-12, has been an officer in the N.W.R. Volunteer Rifles, Defence Force and Auxiliary Force, successively, since 1914, and has been awarded the Volunteer Decoration and General Service Medal, North West Frontier. He is at present Lieut.-Colonel Commanding the N.W.R. Battalion A.F. (I.).

Mr. Raymond W. Troth has been appointed Signal Engineer of the St. Louis—San Francisco Railroad, with headquarters at Springfield, Mo.

We regret to record the death on September 2 of Sir Percy Rothera, Kt., O.B.E., Deputy-Chairman of the South Indian Railway Company. Sir Percy was educated at Rugby and began his engineering training with some four years' experience in the construction of the northern section of the Great Central Railway extension to London, under the late Mr. Edward Parry. In 1898, at the age of 21, he joined the South Indian



The late Sir Percy Rothera, O.B.E.

Deputy-Chairman, South Indian Railway Co. Ltd.
Agent, South Indian Railway, 1925-1935

Railway as an Assistant Engineer and rose through various grades to be Chief Engineer. His work received the special recognition of the Home Board for its efficiency in carrying out the renewal of several large multiple span girder bridges by a method designed by himself and described in his paper "Renewal of Large Span Girders in Southern India" presented to the Institution of Civil Engineers in 1914, for which he was awarded the Indian Premium and a Telford Premium. During the war of 1914-1919 Mr. Rothera saw service in Mesopotamia and rose to be Director of Mesopotamian Railways with the temporary rank of Lieutenant-Colonel. In recognition of his outstanding services, he was awarded the O.B.E. After his return to the South Indian Railway he was appointed Agent in 1925 and retained this position until 1935. In 1932 he received the honour of knighthood.

We regret to record the death at Salisbury, Rhodesia, on August 22, of the Hon. John Wallace Downie, formerly Minister of Mines & Public Works in Southern Rhodesia, and High Commissioner for Southern Rhodesia from 1930 to 1934. Mr. Downie was born in Glasgow in 1876, and at the age of 13 obtained a job on the Caledonian Railway. He continued as a railway worker until 1897 when he went to South Africa.

INDIAN RAILWAY STAFF CHANGES

Mr. A. A. Phillips, V.D., Divisional Superintendent, Karachi, has been appointed to officiate as Chief Commercial Manager, N.W.R.

Mr. J. W. Ogle has been appointed to succeed Mr. Phillips as officiating Divisional Superintendent, Karachi, N.W.R.

Mr. J. W. Henderson has been appointed to succeed Mr. Ogle as Divisional Superintendent, Ferozepur, N.W.R.

Mr. L. P. Misra has been confirmed as General Manager, E.B.R.

Mr. J. N. E. Nagle has been appointed to officiate as Deputy Traffic Manager, E.B.R., as from June 4.

Mr. F. F. Parish has been appointed to officiate as Financial Adviser & Chief Accounts Officer, G.I.P.R., as from June 4.

Mr. R. Ramaswami Ayyar has been appointed to officiate as Deputy Chief Accounts Officer, G.I.P.R., as from June 10.

Mr. J. H. F. Raper has been confirmed as a Member of the Railway Board, as from May 12.

The appointment of Mr. A. C. Griffin, O.B.E., to officiate as General Manager, N.W.R., previously recorded in these columns, took effect from June 5.

Rai Bahadur N. K. Mitra has been appointed to officiate as Chief Engineer, E.I.R., as from April 16.

Mr. R. A. Saunders has been appointed to officiate as Divisional Superintendent, E.I.R., as from April 15.

Mr. G. W. Scriven has been appointed to officiate as Divisional Superintendent, E.I.R., as from April 11.

Mr. A. O. Evans has been appointed to officiate as Chief Operating Superintendent, E.I.R., as from April 16.

Mr. H. W. Higgins has been confirmed permanently as Deputy Chief Mechanical Engineer, N.W.R.

Mr. H. H. Cooper has been confirmed permanently as Deputy Chief Mechanical Engineer, N.W.R.

Mr. P. N. H. Baker has been appointed to officiate as Deputy Chief Mechanical Engineer, E.I.R., as from May 5.

TRANSPORT SERVICES AND THE WAR—54

Heroism of railwaymen—Sheeting of wagons—Extension of Kent area prohibition—Tickets to prohibited Scottish Area—Timber control and transport subsidy—Visits to reception areas—Hamm marshalling yard—Continental train services—G.W.R. "Spitfire" club

On August 28 the King and Queen paid a visit to the Northern Command and saw among other things a demonstration on a model railway of how heavy artillery is moved. Their Majesties left Buckingham Palace on the evening of August 27 when air raid sirens were being sounded, but they continued their drive to the station and the Royal train proceeded slowly until the "raiders passed" signal was given. A lieutenant-colonel of the Royal Engineers told the King and Queen how on August 8, 1918, King George V went to a 14-in. naval gun position on a railway mounting near Arras and gave orders for the first shot to be fired on Douai railway junction. After the shot King George told the lieutenant-colonel, who was then in command of the battery, that he had just come from the Fourth Army, which was launching its attack on Amiens. He added: "You can be perfectly sure that the Germans will have to rush their reinforcements from Ypres through Douai. Why not keep up a harassing fire on the railway junction?" In the next two months we dropped 120 tons of high explosives on the railway junction. "Afterwards I saw an English lady who had lived there all through the war, and she told me that there were 400 casualties in a German troop train on our first day's firing, and that the Germans only used the station occasionally afterwards," concluded the lieutenant-colonel. The King and Queen saw photographs of the damage done as a result of King George V's suggestion, and the King asked: "Did my father ever know what had followed his suggestion?" The officer replied that the late King never knew it.

Railwaymen Save Ammunition Train

An ammunition train, consisting of some 50 wagons, which was standing on a single-line railway in the South of England was hit by an explosive bomb on the night of August 22. Two railwaymen hastily collected a working party to assist in removing the undamaged wagons to a place of safety. The moving of the wagons took about two hours, and during the whole of that time explosions were taking place from the burning wagons and debris was shooting in all directions. Sub-ganger George Frederick Keen, who lives in a house next to the line, saw a flash outside shortly before midnight. He left his house and counted 11 incendiary bombs being dropped, followed by explosive bombs one of which hit the third truck of ammunition. Keen first assisted persons in neighbouring cottages into their shelters and was joined about ten minutes later by Lengthman George Henry Leach, who was at home two miles from the scene but thinking that a bomb must have fallen near the train had jumped on his bicycle and hurried to the line. Keen called upon military personnel from an adjoining salvage depot to help him save some of the wagons, and five auxiliary firemen who had arrived by this time also volunteered to accompany Keen and Leach.

The third wagon was burning furiously and small arms ammunition was exploded. Keen first attempted to separate the first two wagons, but because of the intense heat and uphill gradient this manoeuvre was unsuccessful. It was therefore decided to go to the other end of the train and move the wagons out of danger one by one, uncoupling each wagon in turn. At this stage Keen tried to telephone for a locomotive but communication had failed and the wagons had to be shifted by hand. The last wagon to be moved was well alight when the men reached it. The group of wagons involved was moved about 300 yd., and the men had started to recouple the trucks when an engine arrived. During the later stages of the operation, Keen and Leach were joined by other railwaymen who arrived with a station-master and area inspector. The official report from the Southern Railway Company states that, but for the action of

Keen and Leach in initiating the work of moving the wagons, it is likely that most of the train would have been involved. Sub-ganger Keen took the lead and organised the efforts of all, both railmen and other volunteers. Both railwaymen concerned acted regardless of their own safety. They had left home without steel helmet or gas mask and the heat necessitated both men having to strip off the greater part of their clothes in order to work at all.

Another Example of Railwaymen's Courage

How railwaymen in the South of England volunteered to a man to maintain essential trains past an unexploded bomb is described in an announcement by the Railway Executive Committee. One evening last week an unexploded bomb fell a short distance from a main-line signal box, and as a result the train services were temporarily suspended. The military experts were of the opinion that the bomb was of such a kind that it could not be disposed of immediately, and the suggestion was made that a screen of wagons placed on the up line would enable single-line working on the down line to be considered. Thirty high-sided wagons loaded with coal were shunted on to the up line, and volunteers were then asked to work freight traffic past the spot. The traffic and locomotive running staffs volunteered to a man, and the crews of down trains from London were equally responsive, refusing to accept relief through the affected district from the volunteers sent to meet them. As a result of the courage shown by these railwaymen, 24 important freight, newspaper, and fish trains were worked past the danger spot until the bomb was removed, allowing the ordinary passenger train services to be resumed.

Dispatch of Goods from Ports: Sheeting of Wagons

As a further step to prevent congestion in the ports, the Minister of Transport has given instructions that railway companies shall convey goods in open railway wagons if neither covered wagons nor sheets are available and congestion is likely to result if the goods are not immediately despatched. Sheets for covering wagons are made from flax. Some of the usual sources of supply are not now available and the existing stocks of sheets are not always sufficient to meet fully the enormous demand created by the increased traffic since war began.

These instructions will become operative, however, only when a port emergency committee serves notice upon a railway company that it is necessary, in order to clear the port, for certain traffic to be dispatched forthwith. Such notice will be served only when there is a real danger of acute congestion occurring should goods wait until covered wagons or sheets are available, and not in cases where there is merely a day-to-day shortage. Traffic will not in future be double-sheeted.

The Minister of Transport has also made an Order, under the Defence Regulations, relieving a railway company from liability for damage to merchandise carried unsheeted in accordance with the Minister's instructions. It is entitled the Railways (Sheeting of Traffic) Order, 1940, and is dated August 26. The text says that, in exercise of the powers conferred upon him by Regulation 56 of the Defence (General) Regulations, 1939, and of all other powers enabling him in that behalf, the Minister of Transport orders as follows:—

"Notwithstanding any obligation imposed upon the railway companies by or by virtue of the Railways Act, 1921, or any other Act or instrument determining their functions, merchandise shall only be carried by a railway company subject to the condition that the company shall not be liable for any damage caused thereto by reason of the fact that

such merchandise is conveyed in open wagons and not covered by sheets (or is not double-sheeted as the case may be) if conveyance in such manner is necessary in order to comply with any directions issued to the railway companies by the Minister of Transport, and such condition shall apply to the carriage of any merchandise without any special contract in writing."

Kent Area Prohibition Extended

The area in Kent to which entry for holiday or other pleasure purposes is prohibited, has been extended to include the parishes of Hadlow, Pembury, Capel, Brenchley, Horsmonden, and Lamberhurst, all in the rural district of Tonbridge. The prohibition came into effect at midnight, August 30-31.

Passengers to Scottish Prohibited Area

The Minister of Transport has announced that tickets by rail to stations within the Prohibited Area in Scotland, from stations outside that area, continue to be issued by the railway companies, but intending passengers must satisfy the military authorities before entering the area that they possess the necessary permission.

Timber Control

The Control of Timber (No. 17) Order, made by the Minister of Supply, came into force on August 31. The Order introduces an up-to-date schedule of the maximum prices for home-grown timber, hitherto set out in the schedules to the No. 1 and No. 12 Orders. In general there is no change in prices, but in a few cases adjustments are made in the prices of home-grown mining timber. In particular, the differential prices for Scottish mining timber delivered to mines in England are abolished and a transport subsidy is to be paid on long railway hauls in the United Kingdom and on sea freight from Ireland and Scotland. This subsidy arrangement is outlined in the following paragraphs.

Transport Subsidy for Home-Grown Mining Timber

In order to encourage the production of home-grown mining timber in districts remote from collieries, the Timber Controller will pay a subsidy to persons who have paid the railway charges in respect of such timber on long railway hauls in the United Kingdom. The cost of sea transport on mining timber produced in Northern Ireland and Scotland will rank with rail transport costs for payment of the subsidy. For the time being the subsidy will not be payable on mining timber if delivered to mines in the counties of Monmouth, Glamorgan, Pembroke, Carmarthen, or Brecon. In the case of inland hauls, the subsidy will consist of the amount by which the railway charge for carriage only exceeds 15s. a ton on home-grown mining timber consigned to collieries direct or *via* importers' and merchants' yards or colliery associations' yards. Mining timber is described in Division D of the Schedule to the Control of Timber (No. 17) Order, which came into force on August 31, and includes larch in the round up to and including 9 in. mean quarter girth over bark and fir and hardwoods in the round up to and including 7 in. mean quarter girth over bark when consigned to collieries for propping and shoring purposes and for pit sleepers underground.

In the case of mining timber produced in Northern Ireland, the subsidy will consist of the amount by which the sea transport costs and railway carriage charges before and after shipment exceed 15s. a ton. The subsidy on sea transport costs in addition to any railway carriage charges will also be payable where it is found more convenient to move timber produced in Scotland by sea. Application for the payment of subsidy should be made to the Timber Controller, Branch 8, Clifton Down Hotel, Bristol, and should be accompanied: (a) by receipted railway bills and a declaration in the prescribed form; (b) where sea transport costs have been incurred, by shipping documents relating to each cargo, namely, bill of lading, charter party, vouchers, and weighbills issued by the railway company or public weigh office at the port of discharge; (c) by a certification by a colliery in the prescribed form; and (d) by a statement of claim in the prescribed form.

In the interests of national economy, and in order to avoid unnecessary rail transport, it is essential that all home grown mining timber should be sent to the nearest market, states the official announcement. Each coalfield will naturally receive the mining timber produced in and near its own area, but for longer hauls it is intended that deliveries shall, as far as possible, conform to the following general plan of distribution:—

Producing Areas	Receiving Pitwood Districts	General Description of Receiving Areas
S.E. England ...	4 and 7A ...	Derby, Leicester, Nottingham, S. & W. Midlands.
S.W. England ...	7A ...	S. & W. Midlands.
North Wales ...	5 and 7A ...	Lancashire, etc., S. & W. Midlands
Lake District ...	2, 3 and 5 ...	Northumberland, Durham, Cumberland, Yorkshire, Lancashire, etc.
E. Midland Counties & East Anglia ...	3 and 4 ...	Yorkshire, Derby, Leicester, Nottingham.
South of Scotland ...	2, 3 and 5 ...	Northumberland, Durham, Cumberland, Yorkshire, Lancashire, etc.
North of Scotland ...	1, 2, 3, 4, 5 ...	Scotland, Northumberland, Durham, Cumberland, Yorkshire, Nottingham, Derby, Leicester, Lancashire, etc.
Northern Ireland ...	5 (and Cumberland) ...	Lancashire, etc., Cumberland.

The subsidy will not normally be paid on timber consigned from the producing areas named in the preceding paragraph to receiving areas other than those shown directly opposite their respective producing areas.

A subsidy of £1 a ton will be paid by the Timber Controller on mining timber produced in Eire and consigned to collieries in this country. Persons wishing to claim subsidy must produce, in respect of each cargo, the bill of lading, charter party, and weighbills issued by the railway company or public weigh office at the port of discharge, together with a certification by a colliery and a statement of claim in the prescribed form.

Southend Pier and its Railway Closed

Southend pier was closed to the public on August 31. The pier, which is about 1½ miles long, has an electric railway along it.

The pier was opened in 1835 and was purchased in May, 1875, for £12,000 by the Southend Local Board. In 1876 a horse tramway was built along it, and this was converted to electric traction by the late Colonel R. E. B. Crompton's firm and opened in August, 1890, as "Crompton's Electric Railway." It was a 3 ft. 6 in.-gauge single line laid with Vignoles rails, and current was conducted by a bare copper strip. The cars, then as now, were open sided and seated 32 passengers. The financial results were good and orders were placed with Cromptons for additional equipment; by 1894 there were in service three trains each of three cars. In 1927 powers were obtained to double the track, instal automatic signalling, and build a new arm at the pier-head, 1½ miles from the shore. The extension was opened by Prince George, now Duke of Kent, in July, 1929. Some 3,000,000 persons normally used the pier every year in peacetime, of whom 2,000,000 were customers of the electric railway.

Visits to Reception Areas

The Minister of Transport has announced that cheap rail facilities for visits to children evacuated under the Government scheme from the Metropolitan evacuating area, and the Medway towns, will be restored from September 8. As many of those who will wish to make these visits are now working on Sundays, the L.N.E.R., L.M.S.R., and Southern Railway Companies have arranged that the tickets will be available by any train on any day of the week; the Southern Railway is also running some special trains on Sundays. On the Great Western Railway the traffic is stated to be so heavy that it is impracticable for the company to provide for visits by the ordinary weekday services except on Tuesdays, Wednesdays, and Thursdays. The company is, however, running certain special trains at week-ends to the more distant reception areas. Where the return journey can be made in one day and will allow a minimum of 5 to 6 hours in the reception area, day return tickets will be available at the cheap rates; where the return journey cannot be made in one day, tickets at slightly increased fares will permit of an overnight stay in the reception area. The Minister of Home Security has given instructions to ensure that those who take advantage of these facilities to visit children in areas to which pleasure travel is prohibited will not be turned back.

Parents who wish to obtain cheap tickets must first register with their local authority. After registration each parent will be entitled on application to one voucher a month. This voucher must be obtained at least three days before the date of travel and, if presented at the departure station shown on the voucher, will entitle the holder to a railway ticket at the specially-reduced fare.

Hamm Marshalling Yard

Before the last war the great increase in goods traffic in Germany had directed special attention to improving the efficiency of marshalling yards, and the financial stringency after the war made it imperative to reduce shunting costs. The result was the mechanisation of the yard at Hamm, which was put into operation in October, 1925, and attracted widespread attention from railway engineers and operating officers as a model which, with variations to suit local conditions, could be adopted elsewhere. After the completion of the Hamm yard, the yard at Duisberg (Hochfeld Süd) was also mechanised, and put into service in March, 1928. These two yards are, respectively, at the east and west ends of the Ruhr industrial area, and are, consequently, of very great traffic importance. The principle upon which each has been designed is the same, namely, the installation of hydraulic rail brakes for the purpose of regulating the speed of vehicles entering the various marshalling sidings. Whereas the Hamm yard is worked on the hump principle, however, the Hochfeld Süd yard, being on sloping ground, is worked entirely by gravity. As will be seen from the layout plan of the hump at Hamm yard, there are four rail brakes, so that the distance the trucks have to run into the sorting sidings after retardation is reduced to a minimum. The success of a mechanised yard like that at Hamm depends largely upon the skill of the men in the control tower who operate the brake. They are responsible for the safe shunting of the vehicles and their contents, and with practice they become highly skilful,

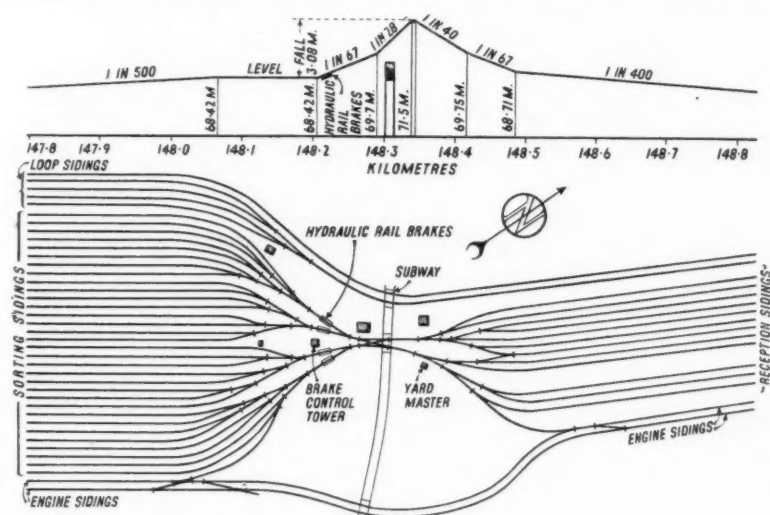


A view of the sorting sidings at Hamm marshalling yard, German State Railway, showing the four hydraulic rail brakes and the control tower

judging from observation of the wagon or rakes of wagons approximately what amount of retardation they will require to enable them to travel into their respective sidings at such a speed that they will come to a stand in contact, but without colliding with, the accumulation of other vehicles already there, or, should the particular siding be empty, so that they will come to rest at its far extremity. In the event of an operator finding that he has not braked a wagon sufficiently, he gives an electric horn signal to the shunters in the yard, and so passes the responsibility of applying local brakepower, so that the wagon shall not collide violently with others already in the siding. Such instances are rare, and occur mainly when unfamiliar or special wagons are being handled.

The brakes at Hamm and Hochfeld Süd are of the Thyssen or Frölich type, such as are used by our own L.N.E.R. at Whittemoor and Hull, and by the L.M.S.R. at Toton, and have already been described in THE RAILWAY GAZETTE. It may be recalled that the degree of braking is automatically affected by the weight of the vehicle, and it is not possible for the brake operator to exercise a greater braking effort on the wagon than that which corresponds to its weight, that is to say, excessive braking of the wagon on account of incorrect estimation of its weight which might result in too severe a retardation, thus moving or damaging its contents, is impossible. All the points are automatically worked. The importance of this phase of the mechanisation of the yard may be realised from the fact that at Hamm the shunting capacity of nine trucks a minute is reduced to six trucks a minute if the automatic points have to be worked by hand.

The results obtained at the mechanised yards of the Reichsbahn have fully come up to expectations, and, whereas the average time required to shunt a 50-wagon train is only 15.3 min., tests have shown that the equivalent work in a non-mechanised yard takes an average of 24.7 min. Taking into account the work which has to be done by



Layout and gradient profile of the reception and sorting sidings and the hump between them at Hamm marshalling yard

the shunting locomotive in the sorting sidings (closing up the train; correcting false shunts, etc., averaging 3 min. for a train of 50 trucks), the capacity of the mechanised yard at Hamm under normal conditions, using one locomotive, is 3,900 trucks a day. In times of pressure up to 4,002 trucks can be dealt with, and, if two humping locomotives are used, the capacity under normal conditions can be increased to 5,800 trucks a day. These figures, of course, relate to peacetime, and we have no information as to what has been accomplished under war conditions before Hamm received the regular attention of the R.A.F.; to date the yard has been bombed 60 times, and it will be interesting to learn (after the conclusion of hostilities) the precise effect of this disturbance to traffic.

Air Raid over Irish Railway

Eire, which is still neutral territory with official German representation in Dublin, received its first German air attack on Monday of last week, August 26. The Information Bureau of the Eire Government issued the following statement that evening: "A bomber aircraft of German nationality flew over the area of Campile, Ballymitty, Bannow, and Duncormick, Co. Wexford, between 2 o'clock and 3 o'clock this afternoon. Bombs were dropped at each of these points. The Co-operative Creamery at Campile was wrecked. Three girls were killed and one injured by falling masonry. The Irish Chargé d'Affaires in Berlin has been instructed to make a protest to the German Government and to claim full reparation." Campile and Duncormick are on the railway between Rosslare and Waterford, and Ballymitty and Bannow lie to the south of that line in the direction of the coast. This section of railway is the property of the Fishguard & Rosslare Railways & Harbours Company, a joint undertaking of the G.W.R. and of the Great Southern Railways; the latter works the Irish lines of the Fishguard Company. The line was opened for public traffic on August 30, 1906, as part of a new route to Southern Ireland using the Fishguard-Rosslare steamer services established on the same date.

Only a few days earlier (on August 21), it was announced in Bohemia that the names of the streets in Prague had been altered by the German authorities so that none of them should have British or French associations; a tribute to the neutrality of Eire was paid by the fact that English Street was re-named Irish Street.

The Local Security Force in Eire

The Local Security Force in Eire (the equivalent to the British Home Guard) has adopted as its badge a bronze harp on a green background—the same symbol as that used by the A.R.P. services in Eire.

Belfast—Dublin Train Service Delays

The reputation for punctuality of the Great Northern Railway (Ireland) has suffered recently through trains from Belfast being stopped at Goraghowood so that the identity papers of passengers may be examined by the Royal Ulster Constabulary. The G.N.R. has erected a new notice board at the entrance to platform No. 1 at Amiens Street station, Dublin, on which is indicated the expected lateness of every train, based on the extent of the delay at Goraghowood.

The Baltic States

In view of the entry of the Lithuanian, Latvian, and Estonian Soviet Socialist Republics into the Union of Soviet Socialist Republics, the Embassy of the Union of Soviet Socialist Republics in Great Britain has given notice that entrance into and transit through these Republics without Soviet visas is not permitted. Exception is made only for the transit visas issued by the diplomatic representatives of the former Lithuanian, Latvian, and Estonian Republics up to August 7, 1940. All other visas issued by the former diplomatic representatives of the Republics are cancelled. All entrance or transit visas for the three Republics from August 7 are issued by the embassies, legations, and consulates of the Union of Soviet Socialist Republics. All those who are in the possession of national passports of the former Lithuanian, Latvian, and Estonian Republics and who are at the present time abroad may enter the Lithuanian, Latvian, and Estonian Soviet Socialist Republics after August 7 only on obtaining a Soviet visa.

The Moscow radio stated on July 28 that the railway through Latvia and Lithuania from the Russian to the German frontier has been relaid to the Russian 5-ft. gauge. It is still not clear, however, exactly which section of line has been converted.

Railway Services in Holland

A serious accident occurred last week when a span of one of the large railway bridges on the Utrecht—'s Herbogenbosch line, which had been blown up on the day of the German invasion, toppled over and fell on the barges crowded with workmen who were removing the damaged bridge. Casualties were 40 at least. Railway traffic on this line has been interrupted since the beginning of the invasion.

On the occasion of the yearly Utrecht Industrial Fair, held this year under German auspices, special trains, third class only, have been run from those outlying districts which have direct rail communication with Utrecht. Groningen, Friesland, the Twente industrial district round Enschede, and Zeeland were thus served. No trains could be run from the Brabant and Limburg provinces south of the large rivers.

Curtailement of Train Services in Argentina

In response to a request made to them by the Argentine Government, the majority of the railways brought emergency timetables into force on July 1, with a view to reducing as far as possible, consistent with public convenience, the number of trains in operation, and thus ensuring an essential economy in fuel consumption. The suppression of certain trains and the deceleration of others has necessarily involved considerable modifications and adjustments to the existing services; but, in order to avoid serious inconvenience to the public, the companies have endeavoured to restrict the cancellation of trains to those branches where passenger movement is not intense, and the modifications in question are carried out mostly on Sundays. All services considered as absolutely indispensable have been maintained unaltered. The trains chiefly affected are those on the main lines, and only minor changes have been made in the suburban services.

G.W.R. "Spitfire" Club

The G.W.R. has launched a "Spitfire" Club which the entire staff of nearly 100,000 is invited to join. The Directors have started the club with a subscription of £500, and posters are being exhibited at every station, staff room, and workshop throughout the system, where periodical collections will be made.

G.W.R. Salvage Corps

Sir James Milne, General Manager of the Great Western Railway, has issued a personal message, in the form of a well-displayed little folder, addressed to all men and women in the G.W.R. service, inviting them to join the G.W.R. Salvage Corps. Sir James points out that the company has done a great deal already, but now the members of the staff are invited to hunt, and go on hunting, for odd bits of salvage. He suggests that every piece of material should be viewed from the angle "Is it wanted *now*? will it ever be wanted?" If not, now is the time to scrap it. Suggestions also are invited towards making this war effort of the G.W.R. and outstanding success.

Join the GWR
"SPITFIRE"
CLUB

and Help to Buy a
"FIGHTER"

The club has started with a subscription from the Directors of the Great Western Railway of £500

Contributions of any amount will be gratefully accepted by the authorised collectors.

FINANCE THE FIGHTERS

CHARGES (RAILWAY CONTROL) CONSULTATIVE COMMITTEE

Public inquiry to advise the Minister of Transport as to the best method of further increasing the charges of the four main-line railway companies and the London Passenger Transport Board

This inquiry was resumed on Monday, September 2, at Bush House, Strand, before Mr. Bruce Thomas, K.C. (Chairman), Mr. H. E. Parkes, and Mr. John Quirey.

The following tables were submitted by Sir William Wood to the committee in amendment of previous figures which were published in THE RAILWAY GAZETTE of August 30.

Estimated yield from the additions to rates and charges arising from :—

	May & June, 1940 £	July, Aug., Sept., 1940 £	A future year £
Railways (Additional Charges) Order, 1940,			
April 17, 1940	3,390,000	5,190,000	19,258,000
Increased payments for mails	25,000	34,000	136,000
Increased parcels post rates	—	51,000	204,000
Railways (Additional Charges) No. 2 Order			
June 26, 1940	—	421,000	2,070,000
	3,415,000	5,696,000	21,668,000
		30,779,000	

Effect of existing increases and those proposed :—

	To September 30, 1940 £	A future year £	Total for 25 months to September 30, 1941 £
Existing increases			
May and June, 1940	3,415,000	—	30,779,000
July, August and September, 1940	5,696,000	—	—
Year to September 30, 1941	—	21,668,000	—
Appendix II	37,000	69,000	106,000
	£9,148,000	21,737,000	30,885,000
Proposed increases...	—	15,639,000	15,639,000
Total	£9,148,000	37,376,000	46,524,000
Compared with increased costs	—	—	£46,000,000

Sir William also put in the table below which gives the various divisions of passenger traffic receipts and the yields from the proposed charges.

MAIN-LINE RAILWAYS Passenger Traffic Receipts : Estimated Apportionment

	Estimated traffic receipts for a future year at charges in operation on April 30, 1940	Estimated yield for a future year from increased charges imposed on May 18, 1940, or subsequently	Estimated yield for a future year if present 10% increase is raised to 17½%	Additional yield from proposed further increase from October 1, 1940		
	£	%	£	%	£	£
Passengers —						
Ordinary—1st Class ...	3,407,000	8	272,000	14	477,000	205,000
3rd Class ...	35,534,000	8	2,843,000	14	4,975,000	2,132,000
Total ...	38,941,000	8	3,115,000	14	5,452,000	2,337,000
Season Tickets —						
1st Class ...	1,254,000	8	101,000	14	175,000	74,000
3rd Class ...	6,151,000	8	492,000	14	861,000	369,000
Total ...	7,405,000	8	593,000	14	1,036,000	443,000
Workmen ...	4,200,000	8	336,000	14	588,000	252,000
Grand Total ...	50,546,000	8	4,044,000	14	7,076,000	3,032,000

In answer to complaints as to the insufficiency of the information supplied, Mr. Alfred Tylor, for the Railway Executive Committee, said that the information had the approval and consent of the Minister of Transport.

The Chairman said that there were good reasons why it was desirable that certain weekly returns should not be produced.

Sir William V. Wood, of the Railway Executive Committee, was asked by Mr. Comyns Carr for the coal interests, why

when the railways were charged an 11 per cent. increase on an average for locomotive coal, they should want an increase of 17½ per cent. on coal rates. He replied that railway rates were not based on the price of coal, which had gone up 20 per cent. since the outbreak of war. He could not give figures other than in four-weekly periods. He had had to revise figures for July, August, and September by increasing by 12 per cent.

Sir William V. Wood replying on Tuesday to Mr. Lionel Jellinek, for the London Co-operative Society, said that not one in a million persons who travelled to work bought other tickets than season, workmen's, or cheap day tickets. The increases estimated from these three sources would be about £1,200,000, and from the carriage of certain fine classes of food another £400,000 was estimated. Freights had an effect on prices and wages; he did not know how big it was. He thought it desirable to make the increases even, just as the Government in raising postal rates did not differentiate between householders and business firms.

Asked by Mr. Samuels as to possible increases in parcel post and mail charges, Sir William Wood said that these charges were outside the jurisdiction of this committee. As to the non-collection of demurrage charges, he said that they had been dealt with by an earlier and separate Order and with a much greater increase than was proposed to the committee. That Order was not intended to secure additional revenue, but to get a better use of wagons. The railway companies could not apply a means test to every ticket they sold.

Mr. Lovell, representing the United Commercial Travellers' Association, said that after 1918 the railways lost a considerable traffic to the road because of the sudden increase in charges. Of some 100,000 commercial travellers a large number had gone back to the railways since the outbreak of the present war because of petrol restriction, and a further 50,000 would probably return to the railways. Assuming their expenditure on rail fares at £3 a week each this would yield an additional £7,000,000.

Sir William Wood said he had no means of testing these figures. He admitted that a certain number of commercial travellers had gone back to the railways, and in the revised Appendix I the increased revenue from commercial travellers, which was substantial, was allowed for in the estimates for "a future year."

Mr. Lovell referred to a "Gilbertian situation" which arose as a result of the Minister of Transport referring the matter of increases to the Railway Executive Committee, whereby in effect he "applies to himself for an increase in fares, which he submits to this consultative committee, refers it back through them to himself, and finally brings in an order to increase fares. He is somewhat in the nature of a "Pooh-Bah."

The Chairman: You are not far out.

Addressing Sir William Wood, the Chairman pointed out that since the fixing of standard rates and fares in 1928, ordinary passengers had been given an advantage in the shape of 1d. a mile return tickets and a considerable extension of cheap travel facilities. Similarly in the case of merchandise traffic the proportion carried at exceptional rates had largely increased, and this traffic had received advantages in the rates paid. He suggested that in the event of any relaxation in charges primary consideration might be given to season tickets and workmen's fares.

Sir William Wood said that the standard rates for season and workmen's tickets had been settled on a very low basis, and a very large proportion of these tickets was still below the standard. Moreover, the reduction in merchandise charges between 1928 and 1938 was not uniform, as it was much higher in the higher classes than in the lower. As a

whole, merchandise traffics had had benefits in greater proportion than season and workmen's fares, but a large block of merchandise at standard charges had not received benefit.

Wednesday's Proceedings

The Chairman stated on Wednesday that although the Railway Executive Committee had recommended a flat increase all round in transport charges, the Consultative Committee would not necessarily accept that proposal, and did not feel itself bound to October 1. If the consultative committee's enquiries were not completed in time for changes to operate on that date, their introduction would have to come later. It might be that they would come to the conclusion that some traffics should be treated lighter than others. They appreciated the difficulties which lay in the way of giving effect to such a differentiation, but they would value Sir William Wood's assistance in suggesting how effect could be given to such a decision. It might not be practicable to make a definition of foodstuff, but he asked Sir William Wood to examine lists of merchandise rates to see if a system of differentiated charges could be made in place of the proposed flat increase.

Mr. Theodore E. Thomas, General Manager of Operations, London Transport, said that if ordinary fares were raised and workmen's were not, it would lead to operating disaster. Already the considerable advantage offered by travelling within the workmen's period was such as to induce a large number of persons who desired to reach their business, say, at nine o'clock, to travel within that period. If the difference between ordinary and workmen's fares were still further accentuated, that inducement obviously became much greater, and the board was already in considerable difficulty in the East End of London and on certain sections of the Northern Line owing to the large number of people who desired to travel by the last workmen's train. About one-fifth of the estimated main-line passenger receipts was contributed by London suburban traffic. Of the total London Area Pool passenger receipts of £42,457,763 in 1938-39, an amount of £9,791,253 was contributed by third class season tickets or

workmen's fares. It was impossible to run more trains over some sections, on which the heaviest services that could be run in safety were being operated, namely, roughly about forty trains an hour.

The inquiry was continued yesterday (September 5).

Increases in Railway Costs

The Ministry of Transport on September 2, issued the following statement:—

In accordance with paragraph 10 of the White Paper, Cmd. 6168, issued in February, 1940, setting out the agreed financial arrangements for the control of the main-line railway companies and the London Passenger Transport Board, the Minister of Transport undertakes to increase charges promptly in order to cover proved increases in costs and the financial effect of certain other war conditions outside the control of the Companies and the Board. The estimated increases for the period September 1, 1939 to September 30, 1941 amount to £46 millions and the Consultative Committee appointed to advise the Minister has been asked to consider the best method of increasing charges to cover £44½ millions of the estimated increase in costs by the end of the second year of control. In response to a number of requests the following division of the estimate of £46 millions is given to show approximately the increased costs incurred up to May 1, 1940 when charges were increased by 10 per cent. (July 1 for the board) and from those dates to the end of September, 1941.

	Total	Period to 30/4/40 main-line companies and 30/6/40 L.P.T.B.	Balance
	£ millions	£ millions	£ millions
Wages	20.1	3.0	17.1
Allowances to staff serving with H.M. Forces	3.8	1.0	2.8
Materials (including coal)	15.9	3.3	12.6
Other items in connection with conditions arising out of the war	6.2	2.1	4.1
Total	46.0	9.4	36.6

QUESTIONS IN PARLIAMENT

Working Conditions at Kilburn Park

Dr. H. B. Morgan (Rochdale—Lab.), on August 15, asked the Minister of Labour whether the attention of his officers of the Factory Department had been drawn to the working conditions at the Kilburn Park electric power sub-station, Alpha Place, Kilburn, of the London Passenger Transport Board, on the Bakerloo Line; what steps were being taken to improve the ventilation, the high temperature, and the restricted space in which the employees had to work; and whether remedial measures could be expedited.

Mr. Ernest Bevin (Minister of Labour): The question of ventilation was taken up by my department with the board last month, and I understand that some improvements have since been made. Factory inspectors are pursuing the matter, particularly the question of the control of the high temperature, and are making further inquiries as to whether I should be justified in intervening in the matter of space.

Announcement of Station Names

Mr. Robert Morgan (Stourbridge—C.), on August 15, asked the Minister of Transport if he could arrange for the convenience of passengers for the names of stations to be called out by porters when the nameplates had been obliterated, thereby avoiding the waste of

time when passengers descended to ascertain the station and lost their train; and whether he was aware that in various places this procedure was not followed.

Sir John Reith (Minister of Transport) wrote in reply: Platform staffs and guards are instructed to call out the names of stations. If my hon. friend will give me the names of any stations at which the instruction is not observed, I will have enquiries made.

Level Crossings

Mr. N. B. Goldie, K.C. (Warrington—C.), on August 20, asked whether the Minister of Transport was aware that the congestion of traffic at the Wilderspool level crossings on the main Warrington to Chester and Knutsford roads, whereof complaint had previously been made to his department, had been greatly increased by war conditions; and whether he would make immediate representations to the railway company with a view to ensuring that the gates at these level crossings were only closed when absolutely necessary and in order to reduce as far as possible the periods for which the gates were left closed.

Sir John Reith (Minister of Transport), in a written reply, stated: A scheme for bridging this level crossing had been approved and a grant of

75 per cent. promised. The work was unavoidably postponed by the war. I am assured, however, by the railway company concerned that the gates of the Wilderspool level crossing are closed to road traffic only when necessary for the passage of railway traffic, the wartime increase of which inevitably necessitates more frequent closing of the gates.

Sir Granville Gibson (Pudsey and Otley—C.), on August 21, asked whether the Minister of Transport would, as part of reconstruction employment, take the initiative in planning the abolition of all railway level crossings except those in remote rural districts, so that consideration of a post-war scheme might not be embarked upon hurriedly and at the last moment.

Sir John Reith: In the preparation of post-war schemes the Ministry's policy of promoting or encouraging the elimination of level crossings is being continued.

Railway Charges

Mr. H. W. Butcher (Holland-with-Boston—Lib. Nat.), on August 21, asked if the Minister of Transport would ask the Charges (Railway Control) Consultative Committee, as an alternative to suggesting methods of increasing revenue, to recommend savings that might be effected by the main line railways by such means as the dismissal of redundant directors, more modern methods of working and other similar economies.

Sir John Reith: The Consultative Committee's duty is to advise on the adjustment of charges to meet variations in working costs outside the companies' control, due to changes in rates of wages and prices of materials and to operation under war conditions, so far as they can be proved. The railway companies already have an incentive to economy since, under the terms of Government control, they retain a direct interest in net revenue.

Mr. Butcher: While thanking the Minister for his reply, may I ask whether he will give an assurance that, in view of the very heavy burden which is now placed upon the community in respect of railway rates, there will be no further increase until all possible alternatives have been explored?

Sir John Reith: Yes, Sir.

Mr. A. Sloan (South Ayrshire—Lab.), on August 21, asked if the Minister of Transport was aware that, on Tuesday, August 13, a few hours before the publication of *The London Gazette* which contained the Ministry's statement that the railway companies' application for an increase in fares and charges had been granted, G.W.R. ordinary shares rose 30s., L.M.S.R. rose 15s., and Southern Railway deferred rose £3; and could he explain from which source in his department the leakage arose.

Sir John Reith: There was no leakage from the Ministry, and of course no increase has yet been granted. The Railway Executive Committee supply periodically statements of variations in working costs and proposals for a corresponding adjustment of rates in accordance with the agreement between the Government and railways. On August 9, the proposals were referred by the Ministry to the Charges Consultative Committee for public inquiry and advice. On August 12, the committee sent copies to the London County Council and various trade associations; also notice of public inquiry to *The London Gazette* for publication next day.

Mr. Sloan: Am I to understand that it was only by chance that the shares rose immediately before the publication of the information?

Sir John Reith: I inquired into the share rise, and I am informed that in fact no increase of any significance took place. The movements in the prices of junior stock that day were considered minute and might have been brought about by very small-scale buying.

Mr. Robert Morgan (Stourbridge—C.), on August 22, asked whether the Minister of Transport had considered representations that the public enquiry by the Charges (Railway Control) Consultative Committee, which was to be opened on August 26, should be postponed for two months in view of the shortness of notice to the public and to give organisations and individuals adequate time to prepare evidence for submission to the committee on the matters within its terms of reference; and whether he was prepared to accede to the request for postponement.

Sir John Reith wrote in reply: The matter is now in the hands of the Consultative Committee, to which any application for postponement of the hearing or for extended time to prepare a case should be addressed in the ordinary way.

Toll Gate Charges

Mr. R. De La Bere (Evesham—C.), on August 21, asked whether the Minister of Transport could now make some further statement on toll gate charges to the Armed Forces as to their application to private tolls on property, where members of the Armed Forces were proceeding on duty.

Sir John Reith: In view of the feeling of the House last Wednesday, I wrote next day to all owners of private tolls asking whether for the duration of the war they would be willing to grant exemption for members of the Armed Forces when on duty. I am sending Mr. De La Bere a copy of the letter, and will inform him of the result as soon as possible.

Mr. De La Bere: Would it not be just to place on record the commendable promptitude which the Minister of Transport took in the matter?

Colonel Arthur Evans (Cardiff South—C.): Will the Minister be kind enough to publish the result of his inquiries when he receives them, so that the whole country will know of them?

Sir John Reith: I should prefer to inform the House first. With regard to the other matter, I feel very gratified at receiving such commendation from my hon. friend.

Service Between Edinburgh and Kyle of Lochalsh

Mr. Robert Gibson (Greenock—Lab.), on August 21, asked whether the Minister of Transport was aware of the inadequacy of the train service between Edinburgh and Kyle of Lochalsh of Mallaig; and if he would take steps to improve the service by ensuring that passengers from Edinburgh might travel by one of two trains arriving at these destinations on the same day as that of departure from Edinburgh.

Sir John Reith: My inquiries are not yet complete. I will communicate as soon as possible with my hon. and learned friend.

Mr. Gibson: Can the Minister say how long it will take him to find out the particulars of this train service in Scotland?

Mr. G. Mathers (Linlithgow—Lab.): Is not the only point in the Question not so much in getting to Mallaig and Kyle of Lochalsh as being able to get here, and away from all the islands as quickly as possible?

Sir John Reith: I will communicate with both hon. members as soon as possible.

Return Tickets to Prohibited Areas

Mr. Robert Gibson (Greenock—Lab.), on August 21, asked whether the Minister of Transport was aware that return tickets were not issued from places in the south or midlands of Scot-

land to stations in the prohibited areas; and whether he would take steps to secure that travellers to these stations were not thus deprived of the benefit of return tickets at a much lower cost than two single tickets for the same journey.

Sir John Reith: I am told that the railways still issue return tickets to places in prohibited areas, but purchasers are warned that they will have to prove their right to enter the areas.

Mr. Gibson: Will the Minister see that that reply is made known, because there is a widespread impression among Highlanders living in the Lowlands of Scotland that they are unable to get return tickets?

Sir John Reith: Yes, Sir, I will.

Mr. E. G. Hicks (Woolwich East—Lab.): Do I understand that return tickets are issued from Scotland? (Laughter.)

Fuel Economy

Lieut.-Colonel Sir Thomas Moore (Ayr Burghs—C.), on August 21, asked whether the Minister of Transport, in view of the desirability of reducing as far as possible during the war the employment of transport which consumes petrol, would consider the advisability of setting up an enquiry into the possibilities of extending the use of horse transport in all cases where economy rather than speed was the primary consideration; and whether he had taken any steps since hostilities began to encourage maintenance of, or reversion to, horse transport with the object of economising important fuel.

Sir John Reith: I entirely sympathise with the suggestion, but hardly think an enquiry is necessary. The rationing of liquid fuel is in itself an incentive to the maximum use of horse transport. It should be remembered, however, that any substantial increase would involve importation of horses and increased demand for feeding stuffs, already in short supply.

Hillingdon Bridge

Mr. Glenvil Hall (Colne Valley—Lab.), on August 22, asked the Minister of Transport whether his attention had been called to the fact that more than 1,000 yd. of new iron railings were being erected on, and adjacent to, the railway bridge over the Metropolitan Railway, Long Lane, Ickenham, Middlesex, at a time when this material was urgently needed for the war effort; and whether he would take steps to prevent such happenings in future.

Sir John Reith, in a written reply, stated: No iron railings have been erected on, or adjacent to, the bridge. I understand, however, that the Middlesex County Council has recently erected old iron railings near the Metropolitan Railway bridge at Long Lane, Hillingdon. These railings, which had been removed from Western Avenue, have been put up as the result of a recent accident to a child, on representations from the police that protective measures were necessary.

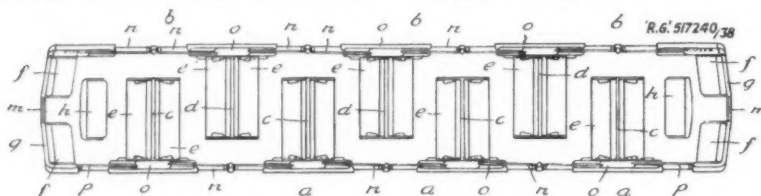
ABSTRACTS OF RECENT PATENTS*

No. 517,240. Carriages

William Sebastian Graff-Baker, of 4, Edwards Square, Kensington, London, W.8, and London Passenger Transport Board, of 55, Broadway, Westminster, London. (Application date: August 12, 1938.)

A carriage has partitions *c* extending from side wall *a* and alternating with partitions *d* extending from side

circuit is de-energised and spring 8 lifts valves 6 and 7, cutting off communication between chambers *b* and *e* and connecting chamber *e* with atmosphere. Eventually piston 2 is forced down allowing brake cylinder to exhaust to atmosphere through choke 13. Reaction of spring 5 is sufficient to prevent wheel skidding.—(Accepted February 6, 1940.)

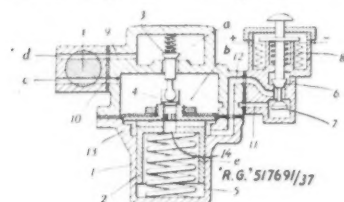


wall *b*, and seats *e* and *f*; the latter are against the end walls *g*. Separate seats *h* are also provided. In this way continuous communication through the train is possible by doors *m*, and ample space is provided for the arrangement of sliding doors *n* which overlap each other in the solid part *o* when closed. Single doors *p* are also provided.—(Accepted January 24, 1940.)

No. 517,691. Braking

Westinghouse Brake & Signal Co. Ltd., of 82, York Way, King's Cross, London, N.1. (Convention date: August 4, 1937.)

A device for the partial release of fluid pressure from the brake cylinder during the stopping of a train consists of a body 1 with a slidable piston 2 which controls valve 3, controlling communication between distributor and brake cylinder, and valve 4, controlling release of fluid pressure from brake cylinder to atmosphere through choke passage 13. At high speeds the

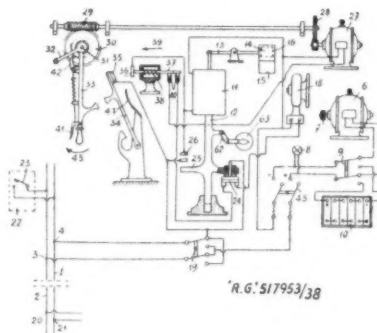


electric circuit and electromagnet are energised to keep valve 6 closed and valve 7 open, and if a brake is applied fluid pressure flows through conduit *d*, isolating cock *i*, and conduit 9 to chamber *a*, thence through conduits 10 and *c* to the brake cylinder. At the same time fluid flows through conduit 11, valve 7, conduit 12, and opening 14 to chamber *e*. As the pressure on either side of piston 2 is the same, the spring 5 maintains it in its uppermost position. As the speed falls the

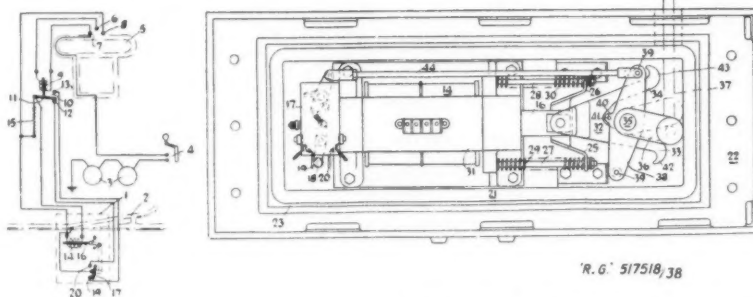
No. 517,953. Safety Arrangements

Igino Giovannelli, of Via XX Settembre, 36/5, Genoa, Italy. (Application date: August 11, 1938.)

In a safety arrangement two separate conductors 1 and 2 connected with a signalling switch 23 in a lodge 22, con-



tact trolleys 3 and 4, respectively, of one locomotive and 20 and 21, respectively, of another locomotive. Direct current is supplied by a generator 6, on each locomotive, driven through drive member 7, or if this is damaged, as indicated by lamp 8, by batteries 10 simply by moving switch 9. Solenoid 11 and core 12 control arm 13 and disc



14, which covers either of the signals 15, 16, and also actuate a switch in the circuit of an acoustic indicator 18. Switch 19 is for adjustment according to the direction of motion. The circuits of two oppositely running trains are closed thus operating necessary signals (15, 16) and indicator 18. Switch 24 shuts off indicator 18 when contact 35 of lever 33 touches contact 36 to raise core 12, cutting of motor 27, and rod 37 actuating safety switch 40 of the same motor which rotates shaft 31 of arm 32 through gears 28, 29 and 30. Lever 33 returns to its normal position if solenoid 11 is damaged. Contacts 25, 26 permit the solenoid circuit to be closed so that brake air device 63, actuated by control 62, is kept open. For resetting pawl 42 is released by handle 41 and lever 33 is rotated in the direction of arrow 43, the springs 38 and 44 then returning arm 34 and rod 37 to their original positions. Contacts 40 are broken if motor 27 continues operating after adjustment of arms 32, 33, lever 34, contact 35, and end 36 of rod 37 to stop this motor, as rod 37 is pushed in the opposite direction to arrow 39.—(Accepted February 13, 1940.)

No. 517,518. Electrically Operated Points

John Stewart Burns, of 55, Thornley Avenue, Knightswood, Glasgow, W.3. (Application date: June 30, 1938.)

An engine has electric motors 3 with controller 4, and, as shown in Fig. 1, is about to traverse points 2 controlled by mechanism 1. The engine has a collector 5 on rail 6 and contacting elements 7, 8 at predetermined distances before the points 2. Between rail 6 and element 7 is the coil 9 of an automatic switch 10 with movable contact 11 and fixed contacts 12, 13. Element 8 is connected to the operating solenoid 14, of mechanism 1, which is shunted by a non-inductive resistance 15 and acts on an armature plunger 16 coupled with an earthing switch 17 having moving contact 18 and fixed contacts 19, 20. The mechanism 1 is mounted in a box 21 with a flange 22 for a cover and a

flange 23 for an inner cover. Plunger 16 is guided by arms 25 and 26 which slide along rods 27 and 28 rigidly secured to the solenoid casing 31 and springs 29 and 30. The limbs 33 and 34 of member 32 are located about

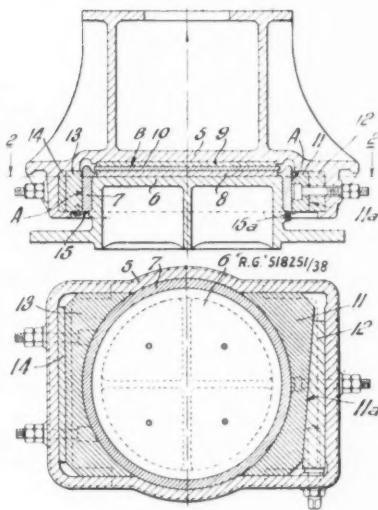
* These abridgments of recently published specifications are specially compiled for THE RAILWAY GAZETTE by permission of the Controller of His Majesty's Stationery Office. Group abridgments can be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, either sheet by sheet as issued, on payment of a subscription of 5s. a group volume, or in bound volumes, price 2s. each, and the full specifications can be obtained from the same address price 1s. each.

shaft 35, which carries an arm 36 secured to points operating rod 37. Also secured to shaft 35 are two members 38, joined by rods 39 and having projections 40 joined by rods 41. The rods 39 co-operate with hook-like ends 42, 43 of limbs 33, 34, with which rod 44 also co-operates. If the train is to pass round the curve the controller 4 is held in the "on" position, but if the train is to pass straight ahead the controller is held in the "off" position.—(Accepted February 1, 1940.)

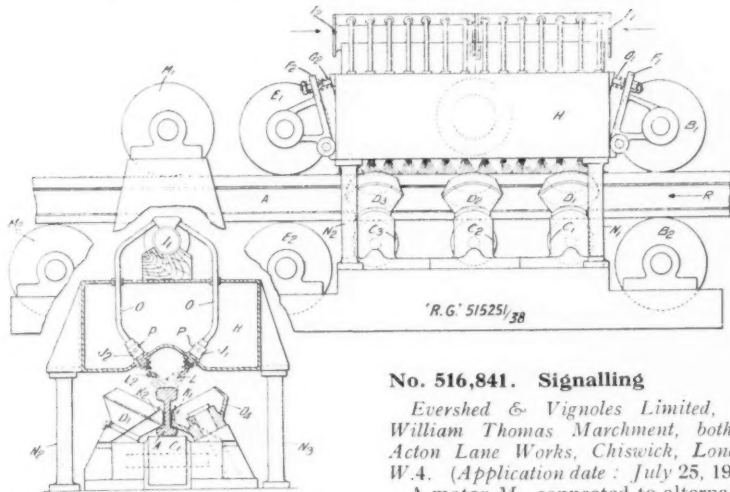
No. 515,251. Heat Treatment of Rails

Christer Peter Sandberg and Oscar Fridolf Alexander Sandberg, of 40, Grosvenor Gardens, London, S.W.1. (Application date, April 12, 1938.)

Feed rollers B_1 and E_1 , co-operating with rollers B_2 and E_2 for feeding a rail A undergoing accelerated cooling during heat treatment, are carried on swinging arms F_1 and F_2 , being pressed by springs G_1 and G_2 to contact the rail. The rail is supported by rollers C_1 – C_3 and guided by rollers D_1 – D_4 . Through pipes O and openings P , respectively, atomising nozzles are fed by pressure water mains I_1 , I_2 , and an air main H , so as to form sprays L_1 – L_2 of water. The pressure of mains I_1 is greater than that of I_2 . The rollers D_1 – D_4 are formed as cups for catching water flowing off the rail head, and catch plates K_1 – K_2 catch water flowing between the rollers.



motives and similar vehicles consists of a female pivot centre 5 above a male pivot centre 6, wearing ring 7, wearing pieces 8, 9 and 10, and wearing block 11 adjustable by wedge 12 movable along surface 11a of block 11 or block 13 adjustable by shims 14. A and B are the vertical and horizontal, respectively, working and wearing surfaces. Additional protection for surfaces A is provided by means of an annulus 15 or 15a, which also retain lubricant.—(Accepted February 21, 1940.)



Columns N_1 – N_4 support the superstructure. Rollers M_1 , M_2 give the rail a counter-camber on leaving the apparatus. There is a grading of degree and rate of cooling of the rail from the first to the last jet.—(Accepted November 30, 1939.)

No. 518,251. Articulated Locomotives

Beyer, Peacock & Co. Ltd., of Gorton, Manchester, Lancaster, and Samuel Jackson, of "Brevik," 260, Bramhall Lane, Stockport, Chester. (Application date: December 1, 1938.)

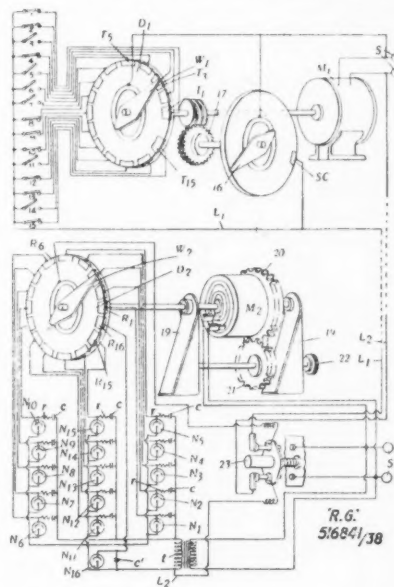
A pivot centre for articulated loco-

No. 516,841. Signalling

Evershed & Vignoles Limited, and William Thomas Marchmont, both of Acton Lane Works, Chiswick, London, W.4. (Application date: July 25, 1938.)

A motor M_1 , connected to alternating supply S , drives the wiper W_1 of a distributor switch D_1 having contacts T_1 – T_{15} connected through switches 1–15 to a line L_1 leading to a wiper W_2 of an equivalent rotary distributor D_2 driven by motor M_2 . A synchronising contact SC has a wiper 16 driven by motor M_1 through worm and pinion gear 17. Distributor D_2 has contacts R_1 – R_{15} , connected with neon lamps N_1 – N_{15} each having a resistance r and condenser c in circuit, and a contact R_{16} , corresponding to contact SC , connected with neon lamp N_{16} having a condenser c' in circuit. A transformer t is also included, as shown, and a switch 23

is incorporated for testing the neon lamps. Motor M_2 is adjusted to be in step with motor M_1 by means of toothed ring 20 meshing with pinion 21 controlled by knob 22. With such apparatus it is possible to transmit no less than fifteen indications over one pair



of lines, and each signalling impulse gives rise to a protracted signal at the receiver instead of flashing.—(Accepted January 12, 1940.)

COMPLETE SPECIFICATIONS ACCEPTED

- 515,251. Sandberg, C. P., and Sandberg, O. F. A. Apparatus for the heat-treatment of steel rails.
 515,268. Hutchinson, E. Railway-vehicle wheel and axle assemblies.
 515,329. Mandl, A., and Metropolitan-Vickers Electrical Co. Ltd. Rheostatic braking of electric motors.
 515,343. Wild & Co. Limited, A. G., and Bates, B. W. Sliding-shutter ventilators for railway carriages and similar vehicles.
 515,352. Le Rossignol, A. E. Devices for preventing collisions on railways or tramways.
 515,486. Roberts, W. S., and Railway Signal Co. Ltd. Railway point and signal rodding and the like.
 515,498. Wingham, M. P. Starting-apparatus for prime movers and the like.
 515,781. Putze, O., and Linke-Hofmannwerke A.G. Motor railcar.
 515,793. Siemens & General Electric Railway Signal Co. Ltd., Golding, A. J., and Horler, F. Electrically-controlled railway signalling-apparatus.
 516,257. Sleigh, H. L., and Cheston, A. S. Arm-rests for vehicles.
 516,283. Baldwin, P. S. Hydraulic brake systems.
 516,316. Wilmot-Breeden Limited, and Smye, A. Means for slidably supporting vehicle windows.
 516,424. Budd Manufacturing Company, E. G. Rail vehicles or tractor units.
 516,433. Ferrari, J. Rail chairs.

NOTES AND NEWS

Northern Ireland Road Transport Board.—It is reported from Belfast that 90 per cent. of the holders of the "A" and "B" stock have accepted the offer of the Northern Ireland Government to buy their holdings by payment of 3½ per cent. Government of Northern Ireland stock. The purchase has taken place over the past six weeks. The value of the stock was given in the McIntock report as £844,329.

Transandine Railway Reconstruction.—The Argentine Government, through the Ministry of Public Works, has asked Congress to vote additional funds amounting to \$8,545,500 paper for the completion of the reconstruction of the Transandine Railway, including track renewals to the undamaged portion of the line and the purchase of the necessary materials. It is proposed to utilise railcars on the new service, and the Message to Congress points out that the cost of the rolling stock and other equipment is now much higher than when the law authorising the reconstruction of the line was passed.

The Accumulator Manufacturers' Export Group.—This export group was formed at the instance of the export Council of the Board of Trade on May 16 last as the result of a meeting of all interested parties at the Board of Trade offices, under the Chairmanship of Sir Clive Baillieu. A committee was elected, of which Mr. D. P. Dunne, Managing Director of the Chloride Electrical Storage Co. Ltd., was unanimously appointed Chairman, and Mr. Edward Powell the Secretary. Almost every accumulator maker in the country is a member of the group, and the following were elected to the committee: Messrs. D. P. Dunne (Chairman), F. J. Holmes (Hart Accumulator Co. Ltd.), W. H. Denby (the Chloride Electrical Storage Co. Ltd.), G. B. Page (Accumulators of Woking (1928) Limited), A. H. Shaw (Young Accumulator Co. Ltd.), and Edward Powell (Secretary). Apart from the expansion

of the export market itself, certain matters relating to the provision and distribution of raw materials, labour, and the like, come within the scope of the group, as also do such subjects as the provision of freight and foreign currency. The offices of the group are at 27, Bedford Row, London, W.C.1.

Canadian Pacific Earnings.—Gross earnings of the Canadian Pacific Railway for July, 1940, amounted to \$15,303,000, an increase of \$3,646,000 in comparison with July, 1939. Working expenses totalled \$12,898,000, or \$1,867,000 more, leaving net earnings \$1,779,000 higher, at \$2,405,000. For the first seven months of 1940, aggregate gross earnings were \$90,688,000, an increase of \$17,223,000 in comparison with the first seven months of 1939, and the net earnings of \$15,041,000 showed an advance of \$9,063,000.

Argentine Railway Results.—A decrease in the net earnings of the privately-owned Argentine railways for the financial year ended June 30, 1940, is forecast in an estimate recently issued by the Instituto de Estudios Económicos del Transporte, of Buenos Aires, based on the returns for the first ten months. The estimate shows a reduction in gross receipts of some 18,000,000 pesos, or 4.6 per cent. Working expenses, it is considered, will be nine millions, or 3 per cent. less, and the working ratio will probably rise from 78.3 per cent. to 79.5 per cent. Taking into account loss on exchange, net profit is estimated to be 4,000,000 pesos less, the calculated net interest on capital falling from 1.45 per cent. to 1.32 per cent. No figures are given for the results of working of the State Railways.

British Standards for Precision Tools.—B.S. specifications have recently been issued for engineers' steel parallels (B.S. 906) and dial gauges for linear measurements (B.S. 907). The former deals with the general dimensions and permissible errors in parallel blocks of sizes ½ × ½ × 4 in. to 2 × 4 × 16 in. Provision is made for two

grades of accuracy, one for high precision work and the other for general tool room use. The main purpose of the specification for dial gauges is to establish standards of accuracy. The tables of permissible errors cover dial gauges from 1½ in. to 2 in. dia., measuring by steps of 0.001 in., 0.005 in., 0.0001 in., and 0.01 mm. Copies can be obtained from the British Standards Institution, 28, Victoria Street, London, S.W.1, price 2s. 3d. each post free

British and Irish Railway Stocks and Shares

Stocks	Highest 1939	Lowest 1939	Prices	
			Sept. 3, 1940	Rise Fall
G.W.R.				
Cons. Ord.	38	21½	27½	—½
5% Cons. Pref.	92	71	79	—
5% Red. Pref. (1950) ..	98	83	92½	—
4% Deb.	103	91	102	—
4½% Deb.	105½	93½	103½	—
4½% Deb.	110	99	108½	—
5% Deb.	121	109½	112½	—
2½% Deb.	63½	54	62	—
5% Rt. Charge	117	104	110½	+1
5% Cons. Guar.	111	96½	105½	—
L.M.S.R.				
Ord.	17	9½	11½	—½
4% Pref. (1923)	46½	20	31½	—1
4% Pref.	63½	37½	44½	—3
5% Red. Pref. (1955) ..	83	58½	72½	—
4% Deb.	98½	85	92	—1
5% Red. Deb. (1952) ...	109	101½	106	—
4% Guar.	87½	73	75	—4
L.N.E.R.				
5% Pref. Ord.	5½	3½	2½	—
Def. Ord.	3½	1½	1½	—
4% First Pref.	38½	19	29½	—1
4% Second Pref.	15	7½	10	—
5% Red. Pref. (1955) ..	55	38	50	—
4% First Guar.	78½	60	65½	—2
4% Second Guar.	68½	47	56	—
3% Deb.	71½	57	62	—
4% Deb.	93	76	82	—
5% Red. Deb. (1947) ...	106½	98	103	—
4½% Sinking Fund Red. Deb.	104½	96	99½	—
SOUTHERN				
Pref. Ord.	78	46½	44	—2
Def. Ord.	19½	7	9½	—½
5% Pref.	100	76	75	—2
5% Red. Pref. (1964) ...	102½	94	87½	—
5% Guar. Pref.	116½	103	105½	—
5% Red. Guar. Pref. (1957)	112½	102½	103½	—
4% Deb.	103	91½	99	—
5% Deb.	118½	109½	112½	—
4% Red. Deb. (1962- 67)	106	98	101½	—
4% Red. Deb. (1970- 80)	102	96	100½	—
FORTH BRIDGE				
4% Deb.	98½	81	87½	—
4% Guar.	95	80	85½	—
L.P.T.B.				
4½% "A"	115	103	107	—
5% "A"	123	106½	113	—
4½% "T.F.A."	105	100½	102	—
5% "B"	117½	102	104½	—
"C"	84	63½	28	—
MERSEY				
Ord.	24½	17½	20½	—
4% Perp. Deb.	93½	88½	89	—
3% Perp. Deb.	77	65½	59½	—
3% Perp. Pref.	55	49½	54½	—
IRELAND				
BELFAST & C.D.				
Ord.	6	3	4	—
G. NORTHERN				
Ord.	6	2½	2	—
G. SOUTHERN				
Ord.	13½	8	6	—
Pref.	26	10	20½	—1½
Guar.	40½	22	20½	—
Deb.	57	45½	42	—

Irish Traffic Returns

IRELAND		Totals for 34th Week			Totals to Date		
		1940	1939	Inc. or Dec.	1940	1939	Inc. or Dec.
		£	£	£	£	£	£
Belfast & C.D. (80 miles)	pass.	4,487	3,860	+	111,782	92,093	+
	goods	766	416	+	18,615	14,852	+
	total	5,253	4,276	+	130,397	106,945	+
Great Northern (543 miles)	pass.	14,750	15,350	—	406,950	389,450	+
	goods	12,850	10,450	+	416,000	340,500	+
	total	27,600	25,800	+	822,950	729,950	+
Great Southern (2,076 miles)	pass.	45,634	53,761	—	1,203,414	1,264,321	—
	goods	46,730	37,854	+	1,536,742	1,360,884	+
	total	92,364	91,615	+	2,740,156	2,625,205	+
L.M.S.R. (N.C.C.) (247 miles)	pass.	7,630	6,660	+	194,650	166,790	+
	goods	6,030	2,690	+	126,250	97,870	+
	total	13,660	9,350	+	320,900	264,660	+

OFFICIAL NOTICES

Indian State Railways

Applications are invited for two appointments in the Transportation (Traffic) and Commercial Departments of Indian State Railways.

Candidates must be British subjects of non-Asiatic domicile, and must be not less than 21 and not more than 25 years of age on the 1st August, 1940. They must either (a) have obtained a degree or other qualification as prescribed in the regulations, or (b) have had not less than two years' practical training, as pupil or apprentice, in the Traffic Department of

a British or Colonial Railway, following a sound general education.

Appointment on probation for three years, with prospects of permanent employment, and of promotion to the higher grades, including the Chief Administrative posts in the Departments.

Further particulars and forms of application may be obtained, on application by postcard (quoting Appointment 18.F.) from the High Commissioner for India, General Department, India House, Aldwych, London, W.C.2. Last date for receipt of completed applications 16th September, 1940.

THE INDIAN STANDARD WAGON CO. LTD. require a **SPRING SHOP FOREMAN**. Applicants must have a wide experience in the manufacture, heat treatment and testing of laminated, volute and helical springs for railway rolling stock. Apply by letter, stating age and whether married, and giving full details of experience to The Indian Standard Wagon Co. Ltd., Bradenham House, High Wycombe, Bucks.

Railway and Other Reports

Buffalo & Lake Huron Railway Company.—For the 6 months to end June available revenue was £13,159. A dividend of 4s. 9d. a share is recommended and £687 is carried forward.

Easton & Church Hope Railway Company.—Net receipts for year to December 31, 1939, according to accounts rendered by the working companies to August 31, 1939, and in respect of Government control from September 1 to December 31, 1939, were £1,208, and miscellaneous receipts £49. General charges were £1,527, and the debit balance was £270, increasing the debit forward, after interest and rent charges, £3,160 (same) to £142,257. The company has a line of $3\frac{1}{16}$ miles in the Isle of Portland which is connected with the Weymouth & Portland Railway by the Admiralty line of $\frac{3}{16}$ mile which the company rents. The line is worked jointly by the G.W.R. and the Southern Railway.

Rhodesia Railways Trust Limited.—Interest and dividends to March 31, 1940, were £78,726 (£74,887) plus registration fees £10 (£17), making £78,736 (£76,880). Last year there was a dividend of £100,000 from Rhodesia Railways and £1,976 profit on investments. This year the railway accounts have been delayed and any dividend forthcoming will be brought into the trust accounts to March 31, 1941. Income tax and N.D.C. is £26,221 (£34,843), and after various minor allocations the balance is £48,292, against £77,183, after an allocation in 1938-39 of £60,090 to investments reserve. The dividend is 6 per cent. less tax (against 5 per cent. tax free) and £158,594 (£185,800) is carried forward.

Modern Machine Tools Limited.—Interim dividend is $7\frac{1}{2}$ per cent. (same).

Wagon Repairs Limited.—Net profit to March 31, 1940, was £98,614 (£84,816) before tax and after depreciation and credit of £6,849 reserves written back. Tax takes £54,750 (£27,000), ordinary dividend is repeated at £10,000 and £22,691 (£24,246) is carried forward.

The Indian Iron & Steel Co. Ltd.—In view of communication difficulties and consequent delays in simultaneous publication of the report in Calcutta

and London, the board has decided to pay a further dividend of $12\frac{1}{2}$ per cent. free of Indian income tax, making in all 20 per cent. for the year ended March 31, 1940.

British Oxygen Co. Ltd.—Interim dividend on increased ordinary capital is maintained at 7 per cent. less tax.

Leyland & Birmingham Rubber Co. Ltd.—Net profit to June 30, 1940, was £118,734 (£99,133). Proposed final dividend is $7\frac{1}{2}$ per cent. with bonus of $2\frac{1}{2}$ per cent., again making $12\frac{1}{2}$ per cent.

Staff and Labour Matters

Engineering Wages

Engineering employers on August 28 heard the trade union case for a further advance in wage rates in their industry. The Amalgamated Engineering Union and the National Union of Foundry Workers claimed an advance of 3d. an hour on basic rates and the restoration of pre-June, 1931, working conditions. On their behalf, Mr. J. Tanner, the A.E.U. president, dealt at length with the position of the industry and its profits. Later the Confederation of Shipbuilding & Engineering Unions, for which Mr. Mark Hodgson spoke, argued the case of the engineering unions which it embraces. Their immediate claim is for a flat rate advance of 10s. a week. There will be further meetings after the employers have considered the claims.

National Arbitration Tribunal

The second award of the National Arbitration Tribunal deals with a wages dispute concerning members of the National Society of Brass & Metal Mechanics in the Midlands general brass-foundry industry. The union had claimed increases of 7s. for men and 3s. 6d. for youths, and, having failed to get an agreement, it reported the dispute to the Minister of Labour, who referred the matter to the tribunal. The tribunal awards an increase of 4s. a week for men aged 21 years and over and 2s. a week to youths between 18 and 21. The increases apply to day and piece workers, and operate from the first full-pay period after August 24. The tribunal consisted of Mr. Justice Simonds, Sir John Forster, Sir Hector Hetherington (appointed members), Mr. J. Stokes (workers' panel), and Mr. W. M. Wiggins (employers' panel). The first award, issued last week, concerned wages in the printing trade.

Contracts and Tenders

An order for 18 diesel-electric passenger locomotives has been placed by the Atlantic Coast Line Railroad with the Electro-Motive Corporation, a subsidiary of the General Motors Corporation at La Grange, Illinois. This is said to constitute the largest order, both as to value and horsepower, ever given for diesels for passenger service.

The Canadian National Railways have recently placed contracts with L. G. Ogilvie & Co. Ltd., of Montreal, for the construction of a locomotive erecting shop at Moncton; with the Fundy Construction Company of Halifax for an 18-stall circular engine shed at Fairview, including a circle wall for a 100 ft. turntable (turntable to be transferred from Willow Park shed) including power house, machine shop, etc.; and with Forbes & Sloat of Fredericton for earthworks for an extension to existing yard facilities at Truro. The three contracts will entail an expenditure of over \$1,000,000.

The Peruvian Corporation has let a contract for 2,500 Fair rail anchors with the P. & M. Co. Ltd.

The South Indian Railway has placed an order with P. & W. McLellan for approximately 8 tons of special sections, iron and steel bars, to the inspection of Messrs. Robert White & Partners.

The Junagadh State Railway has let the following contracts to the inspection of Messrs. Robert White & Partners:—

Spare parts for exhaust steam injectors: Davies and Metcalfe Limited.

3 carriage commodore: John Levick Limited.

12 Salamander crucibles: Morgan Crucible Co. Ltd.

Forthcoming Meetings

Sept. 9 (Mon.)—**Easton & Church Hope Railway Company** (Annual), 14, Queen Victoria Street, E.C., at 11.30 a.m.

LONDON TRANSPORT BUS VISITS TO EVACUATED CHILDREN.—The London Passenger Transport Board has arranged more bus trips to evacuated children for Sunday next, September 8. Relatives and friends of children must obtain a voucher from the local Education Officer, or, in the L.C.C. area, from the local schools concerned, and they must produce the voucher on the bus.

Railway Stock Market

Stock market business has remained at a very low ebb, but in the absence of selling, most securities maintained a firm undertone, although British Funds lost part of their recent strength. Many stocks remain in short supply, and there is little indication that recent gains in investment securities and leading industrial shares will be followed by liquidation. In fact, sentiment is benefitting from the feeling of confidence suggested by the very small amount of selling. Whether markets become reasonably active in the more immediate future will probably turn on the nature of the war news. Pending the outcome of the protracted enquiry into the claim for increased charges, most home railway securities have shown moderate fluctuations. Debentures were inclined to be easier in sympathy with British Government stocks, and various of the "marginal" preference stocks were marked down, although only moderate selling was reported; the lower prices are attributed mainly to the failure of demand to improve.

Fractional movements were shown in Great Western ordinary, which at 27½ compares with 27½ a week ago, but the 5 per cent. preference stock was half-a-point lower at 78½. The guaranteed stock

at 105½ was slightly lower, but the 4 per cent. debentures were 103½, compared with 103 a week ago. L.M.S.R. 4 per cent. senior preference reacted three points to 44½, and the 1923 preference from 32½ to 31. Moreover, the guaranteed stock was 74½, compared with 77½ a week ago. L.M.S.R. ordinary, however, was unchanged on balance at 11½. The 5 per cent. debentures remained at 106, but the price of the 4 per cent. debentures went back from 93 to 91½.

Southern preferred made the reduced price of 43, but the deferred at 9½ were unchanged on the week, although the 5 per cent. preference were lower a point to 75½. The 4 per cent. debentures at 98 were also a point down; the guaranteed stock improved slightly to 106½. L.N.E.R. first preference was relatively steady, and at 30 was, in fact, unchanged on the week, but the second preference declined fractionally to 9½. There was, however, some selling of guaranteed stocks on the part of recent holders who purchased at lower prices; but yields on these stocks are regarded as very generous, and their dividends are, of course, cumulative. The first guaranteed, which was 67½ a week ago, has since reacted to 64½ and the second guaran-

teed from 57 to 54½. L.N.E.R. 3 per cent. debentures were a point down at 62, as were the 4 per cent. debentures at 81½. London Transport "C" remained steady at 28½, but the 5 per cent. "B" stock was fractionally lower on balance over the week at 102½.

Among foreign rails, the chief feature was a better tendency in San Paulo ordinary, which tended to benefit from the improvement in Brazilian Government bonds, and on balance the price has rallied further from 25 to 26½. Elsewhere there was very little business in stocks of the ordinary and preference class, and movements in debentures of the leading Argentine railways were small and relatively unimportant. B.A. Gr. Southern 4 per cent. debentures were better at 38, as were B.A. & Pacific 4½ per cents at 19½. Central Argentine debentures were virtually unchanged on balance, and B.A. Western 4 per cents kept at 31½, but, as in many other directions, quotations did not appear to be tested adequately by business. Canadian Pacific 4 per cent. preference stock was active, and although "ex" the interim payment, the quotation at the finish was 44½, or within half-a-point of the price ruling a week ago.

Traffic Table of Overseas and Foreign Railways Publishing Weekly Returns

	Railways	Miles open 1939-40	Week Ending	Traffic for Week		No. of Weeks	Aggregate Traffic to Date			Shares or Stock	Prices			
				Total this year	Inc. or Dec. compared with 1939		Totals		Increase or Decrease		Highest 1939	Lowest 1939	Sept. 3, 1940	Yield % (See Note)
							This Year	Last Year						
South & Central America	Antofagasta (Chili) & Bolivia	834	25.8.40	£ 14,050	— £ 3,450	34	£ 589,260	£ 439,240	+ 150,020	Ord. Stk.	10½	4½	5	Nil
	Argentine North Eastern	753	24.8.40	ps. 194,700	— ps. 6,900	30	ps. 1,399,500	ps. 1,507,300	— ps. 107,800	—	4½	2	2	Nil
	Bolivar	174	July 1940	4,050	— 150	30	28,630	29,150	— 520	6 p.c. Deb.	7½	5½	6½	Nil
	Brazil	—	—	—	—	—	—	—	—	Bonds.	5½	4½	6½	Nil
	Buenos Ayres & Pacific	2,801	24.8.40	ps. 1,125,000	— ps. 89,000	8	ps. 8,910,000	ps. 10,055,000	— ps. 1,145,000	Ord. Stk.	5½	2	2	Nil
	Buenos Aires Central	190	22.6.40	£ 94,900	— £ 45,200	52	£ 4,912,400	£ 5,293,600	— £ 381,200	—	—	—	—	—
	Buenos Ayres Gt. Southern	5,082	24.8.40	ps. 1,932,000	+ ps. 21,000	8	ps. 15,291,000	ps. 15,577,000	— ps. 286,000	Ord. Stk.	13½	4½	4	Nil
	Buenos Ayres Western	1,930	24.8.40	ps. 635,000	— ps. 5,000	8	ps. 5,023,000	ps. 5,494,000	— ps. 471,000	"	10½	4	3	Nil
	Central Argentine	3,700	24.8.40	ps. 1,374,000	— ps. 606,850	8	ps. 11,518,700	ps. 17,152,100	— ps. 5,633,400	"	11½	4	3	Nil
	Do.	—	—	—	—	—	—	—	—	Div.	4	1½	2	Nil
	Cent. Uruguay of M. Video	972	24.8.40	19,012	+ 5,912	8	139,703	134,190	+ 5,513	Ord. Stk.	2½	—	1½	Nil
	Costa Rica	188	May 1940	17,282	— 7,020	48	193,339	245,516	— 52,177	"	24½	18	17½	11½
	Dorada	70	July 1940	13,200	— 1,300	30	85,200	95,100	— 9,900	1 Mc. Db.	104½	102	98	6½
	Entre Rios	810	24.8.40	ps. 248,600	— ps. 32,000	8	ps. 1,959,800	ps. 2,315,000	— ps. 355,200	Ord. Stk.	6	3	1½	Nil
	Great Western of Brazil	1,016	24.8.40	7,300	+ 1,600	34	336,900	270,700	+ 66,200	Ord. Sh.	3/-	1/2½	7½	Nil
	International of Cl. Amer.	794	July 1940	\$419,682	— \$43,933	30	\$3,724,774	\$3,697,627	+ \$27,147	—	—	—	—	—
	Interoceanic of Mexico	22½	July 1940	6,175	— 315	30	45,615	41,920	+ 3,695	1st Pref.	7½d.	7½d.	—	Nil
	La Guaira & Caracas	1,918	24.8.40	25,425	+ 2,339	34	755,858	669,294	+ 86,564	Ord. Stk.	2½	—	1	Nil
	Leopoldina	483	21.7.40	ps. 245,000	— ps. 19,000	3	786,200	803,200	— ps. 17,000	"	1½	—	—	Nil
	Mexican	319	July 1940	10,223	+ 1,081	4	10,223	9,142	+ 1,081	—	—	—	—	—
Midland of Uruguay	386	15.8.40	10,280	+ 5,399	32	113,699	75,199	+ 38,500	Ord. Sh.	2½	1½	1½	7½	
Nitrate	274	24.8.40	\$3,490,000	+ \$560,000	8	\$29,744,000	\$28,624,000	+ \$1,120,000	Pr. Ll. Stk.	45½	36	38	15½	
Paraguay Central	1,059	July 1940	65,421	+ 1,015	4	65,421	64,406	+ 1,015	Pref.	1½	—	2	Nil	
Peruvian Corporation	100	27.7.40	£13,689	+ £1,889	4	£45,961	£44,932	+ £1,029	—	—	—	—	—	
Salvador	153½	18.8.40	34,125	+ 3,402	33	1,233,707	1,089,368	+ 144,339	Ord. Stk.	38	20	26½	9½	
San Paulo	160	June 1940	830	+ 1,625	52	29,590	33,700	+ 4,110	Ord. Sh.	½	6/6	—	7½	
United of Havana	1,353	24.8.40	16,031	+ 544	8	129,230	129,731	— 501	Ord. Stk.	2	—	—	Nil	
Uruguay Northern	73	July 1940	930	+ 106	4	930	824	+ 106	—	—	—	—	—	
Canada	Canadian National	23,695	21.8.40	947,513	+ 232,569	33	29,987,060	22,744,449	+ 7,242,611	—	—	—	—	—
	Canadian Northern	—	—	—	—	—	—	—	4 p.c.	Perp. Dbs.	74½	60	72½	5½
	Grand Trunk	—	—	—	—	—	—	—	4 p.c. Gar.	100½	76	102	3½	
	Canadian Pacific	17,153	21.8.40	662,200	+ 135,000	33	20,170,800	16,268,000	+ 3,902,800	Ord. Stk.	7½	3½	5½	Nil
India & Ceylon	Assam Bengal	1,329	30.4.40	45,187	+ 6,529	4	135,060	120,437	+ 14,623	Ord. Stk.	76½	60	72½	4½
	Barsi Light	202	20.6.40	2,857	+ 82	12	30,577	25,597	+ 4,980	—	—	—	—	—
	Bengal & North Western	2,091	July 1940	219,225	+ 26,086	18	1,030,913	906,507	+ 124,406	Ord. Stk.	277	229½	240	6½
	Bengal Dooars & Extension	161	20.6.40	4,433	+ 602	12	31,218	22,583	+ 8,635	"	91	84½	215	3
	Bengal-Nagpur	3,269	20.5.40	247,650	+ 17,103	7	1,252,050	1,161,007	+ 91,043	"	94½	83½	92½	4½
	Bombay, Baroda & Cl. India	2,986	20.8.40	199,875	+ 11,850	20	3,703,125	3,297,075	+ 406,050	"	108	90	102½	5½
	Madras & Southern Mahratta	2,967	10.7.40	136,875	+ 11,185	14	1,781,539	1,753,612	+ 27,927	"	104½	92	99½	7½
	Rohilkund & Kumaon	571	July 1940	46,575	+ 8,291	18	239,490	190,076	+ 49,414	"	280	263	250	6½
South Indian	2,542	10.7.40	120,797	+ 6,805	14	1,232,407	1,183,237	+ 49,170	"	102½	88	85½	5½	
Various	Beira	204	June 1940	82,307	—	39	664,403	—	—	—	—	—	—	—
	Egyptian Delta	623	10.5.40	4,591	— 602	6	19,436	20,384	— 948	Prf. Sh.	—	—	—	Nil
	Kenya & Uganda	1,625	—	—	—	—	—	—	—	B. Deb.	55	39	47½	7½
	Manila	277	May 1940	13,908	— 192	48	145,304	165,763	— 20,459	Inc. Deb.	91½	87½	82½	4½
	Midland of W. Australia	1,900	29.6.40	57,130	+ 35,366	13	499,238	370,507	+ 128,731	—	—	—	—	—
	Nigerian	2,442	June 1940	428,043	—	39	3,473,254	—	—	—	—	—	—	—
	Rhodesia	13,287	27.7.40	695,187	+ 37,952	17	11,287,586	10,801,957	+ 485,629	—	—	—	—	—
	South Africa	4,774	May 1940	745,469	+ 55,455	48	9,145,264	8,666,883	+ 478,381	—	—	—	—	—

Note. Yields are based on the approximate current prices and are within a fraction of ½. Argentine traffic is now given in pesos.
 * Quotation is of June 17, 1940; dealings subsequently prohibited.
 † Receipts are calculated @ 1s. 6d. to the rupee.